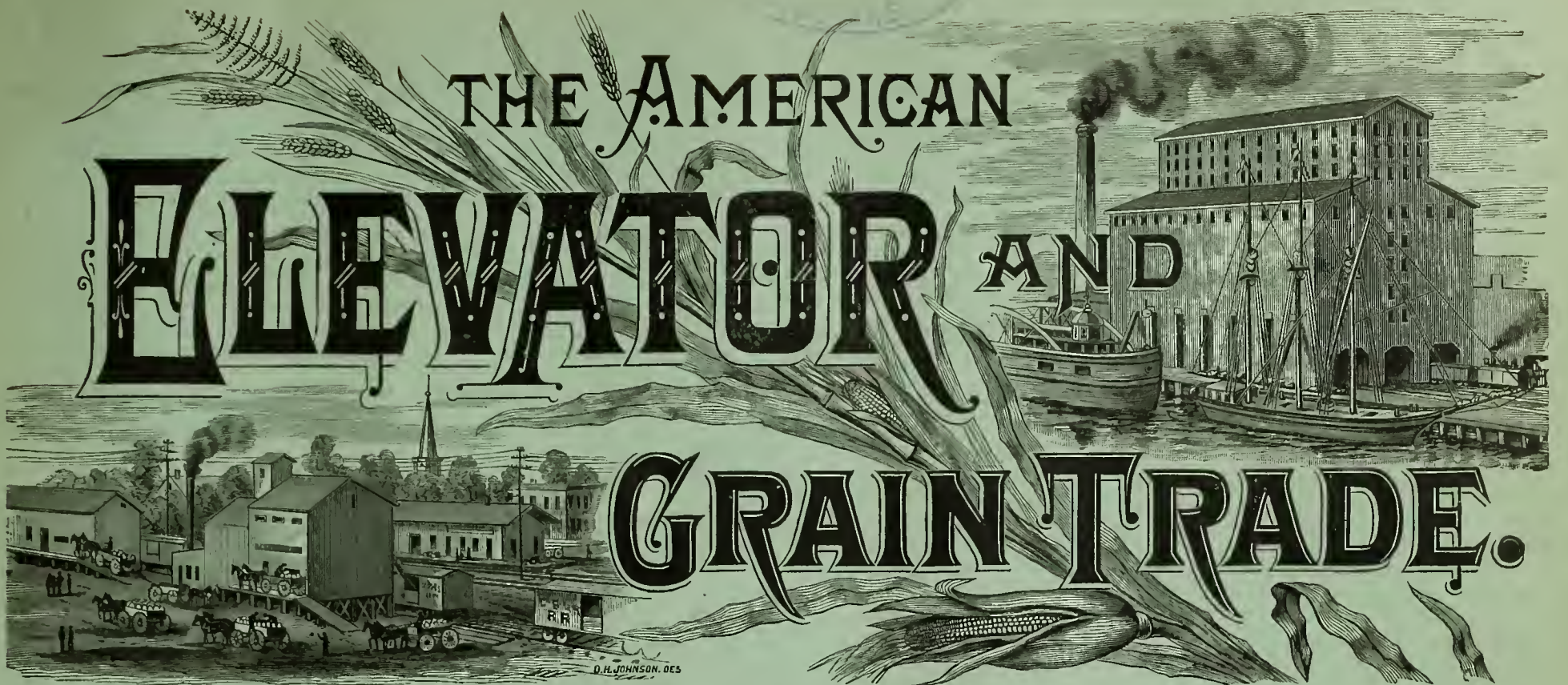


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A MONTHLY JOURNAL DEVOTED TO THE ELEVATOR AND GRAIN INTERESTS.

PUBLISHED BY
MITCHELL BROS. COMPANY,
(INCORPORATED.)

VOL. IX.

CHICAGO, ILLINOIS, MAY 15, 1891.

No. 11.

SUBSCRIPTION PRICE,
ONE DOLLAR PER ANNUM.

ESTABLISHED 1856.

EUREKA

WAREHOUSE,
DOUBLE RECEIVING,
SINGLE RECEIVING,

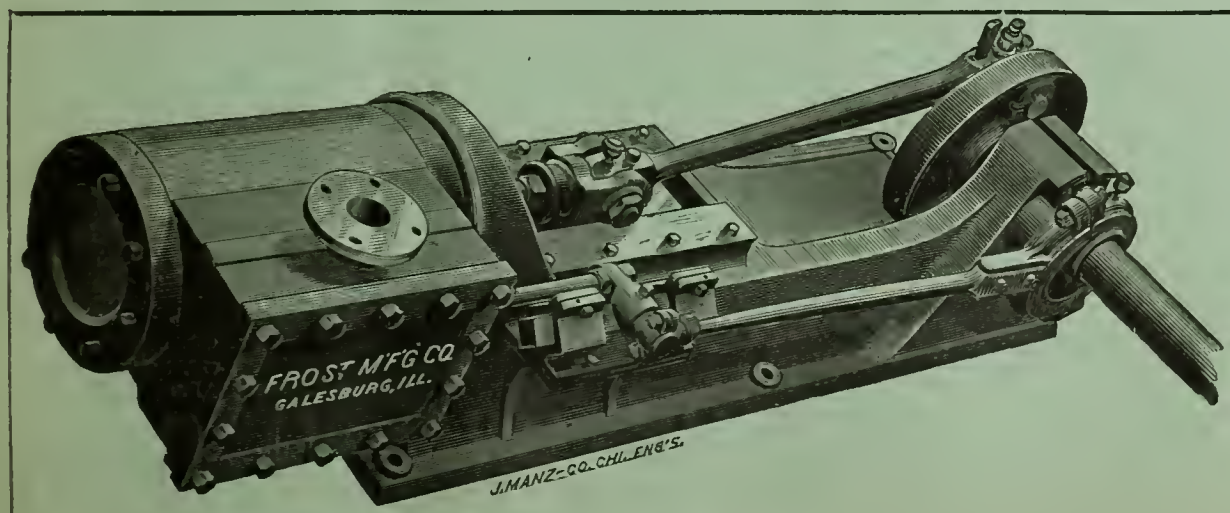
SEPARATORS

Are in every feature
the best and most per-
fectly operating ma-
chines in the world.

More of them are in
use, more of them are
built and more of them
are sold every year
than of any other two
kinds in the world.

S. HOWES, SOLE MANUFACTURER. Silver Creek, N. Y.

CONVEYORS	* * * Elevator Buckets. * * Elevator Boots. * * Elevator Bolts. * * *			BELTING
	 THORNBURCH & GLESSNER MILL AND ELEVATOR SUPPLIES 110 & 112 SOUTH JEFFERSON STREET, CHICAGO, ILL. Elevating and Conveying Machinery a Specialty.			
	* * * PULLEYS. * * * SHAFTING. * * * HANGERS. * * *			



FOR PRICES AND DISCOUNTS
— ON —
Elevator Machinery
AND SUPPLIES
— OF —
EVERY DESCRIPTION,
ADDRESS EITHER STEAM OR HORSE-POWER,
The FROST MFG. CO.,
GALESBURG, ILL.

THE EXCELSIOR DUSTLESS MACHINERY

WATKINS & CO., COMMISSION GRAIN,
Chamber of Commerce.

PEORIA, ILL., June 14, 1891.

GENTLEMEN:—We have clipped to this date something like 500 carloads of oats with the No. 6 "Excelsior" Combined Clipper and Polisher we bought of you at an expense of only a very few dollars for repairs to replace clipping wallowers. The machine has always been entirely satisfactory to us. We have never had a car of oats go off grade through any fault of the machine. We are buying a great many oats clipped by the Clipper and selling to same parties as those from your Clipper, and their oats have frequent claims made back on us.

Yours truly, WATKINS & CO.

BELLEVUE, IOWA, April 17, 1891.

GENTS:—Since purchasing our No. 5 Excelsior Combined Oat Clipper and Polisher of you in March, 1889, we have clipped and cleaned 150,000 bushels of oats, the loss in clipping averaging 6-10 of a pound per bushel, and we have always got the highest price for No. 2 grade oats, while we make no distinction as to quality in our purchasing, but all going to the same bin. This we consider one of the great advantages of a good Oat Clipper. We have always been well pleased with the machine. Repairs just purchased of you, amounting to \$15.00, is all we have had to pay.

Yours truly, REILING & CO.

HOLSTEIN, IOWA, April 10, 1891.

E. H. PEASE MFG. CO., Racine, Wis.

GENTLEMEN:—In regard to the No. 6 Excelsior Oat Clipper and Polisher, and Separator, I purchased of you last fall, I wish to say that it is highly satisfactory and surpasses my best expectations. I have polished about 150,000 bushels of barley with it, and it does this work very evenly and does not break nor hull the grain. I am now running it on oats that test 25 pounds to the bushel and raise them up to 33 and 34 pounds with a shrinkage of not more than 3 ounces to the bushel.

I hesitated some before buying, but now that I know what it will do, I would not be without it for many times its value.

Signed, F. S. MANSON.

CHICAGO, ILL., Feb. 24, 1891.

DEAR SIR:

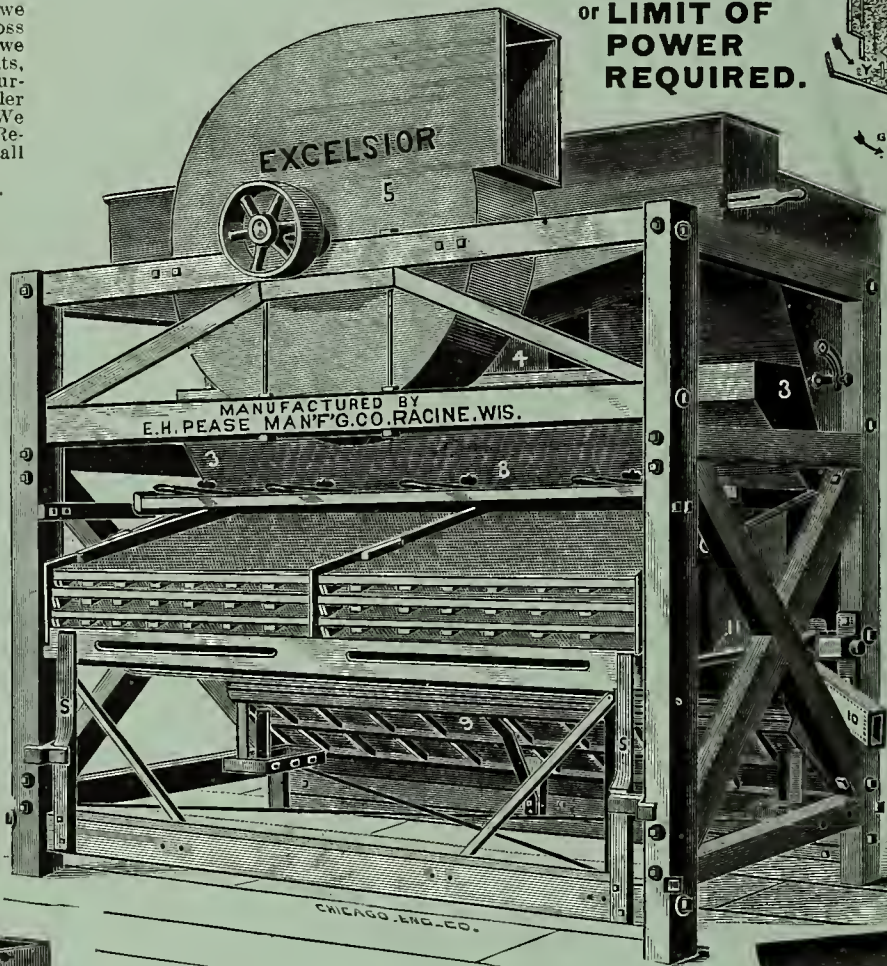
The two No. 8 Excelsior Jr. Oat Clippers we bought of you in June, 1890, are giving splendid satisfaction. We experience no difficulty in raising the weight of oats from 8 to 10 lbs. to the measured bushel. On the 12th inst we run through the two machines a large lot of very foul No. 3 white oats, testing 27 lbs. to the measured bushel, and raised them to a fine bright quality of No. 2 oats, testing 37 lbs.; shrinkage 500 lbs. to 1,000 bushels. The shrinkage being largely "Hulls," and being separated from the dust can be utilized in making ground feed.

On the 18th inst. we run 4,500 bushels of oats through in 3 hours, and raised them from No. 3 white, testing 29 lbs.; to No. 2, testing 38 lbs. Yours truly,

COLUMBIA ELEVATOR CO.,

J. E. CAILEY, Sec'y.

HAS NO SUPERIOR IN POINTS OF
CONSTRUCTION,
DURABILITY,
EXCELLENCE OF WORK,
STILLNESS OF RUNNING,
or LIMIT OF
POWER
REQUIRED.



"Excelsior" Dustless Separator and Grader.

—FOR—

SEPARATING, CLEANING AND GRADING
WHEAT FOR MILLING.

OR ANY KIND OF GRAIN FOR

MERCHANTABLE PURPOSES.

MADE IN 4 SIZES.

CAPACITIES, 150 TO 800 BUSHEL PER HOUR.

CEDAR RAPIDS, IA., Dec. 19, 1890.

GENTS:—The No. 8 EXCELSIOR OAT CLIPPER, SEPARATOR, GRADER, AND POLISHER COMBINED, bought of you in January, 1890, is still doing business at the old stand and giving as good satisfaction as ever. We are now using it to polish barley and is giving good satisfaction.

Yours truly,

MINER & MORGAN.

"Excelsior" Dustless Elevator Separator.

FOR ALL KINDS OF
GRAIN OR SEEDS.

MADE IN 4 SIZES.

CAPACITIES, FROM 300 TO 2,000 BUSHEL PER HOUR.

HAS LARGE SIEVE SURFACE, POWERFUL
FAN AND PERFECT VENTILATION.

GRAIN SHOE IS COUNTER-BALANCED BY
COUNTER-BALANCE SPRINGS

THE SMOOTHEST

—AND—

LIGHTEST RUNNING SEPARATOR

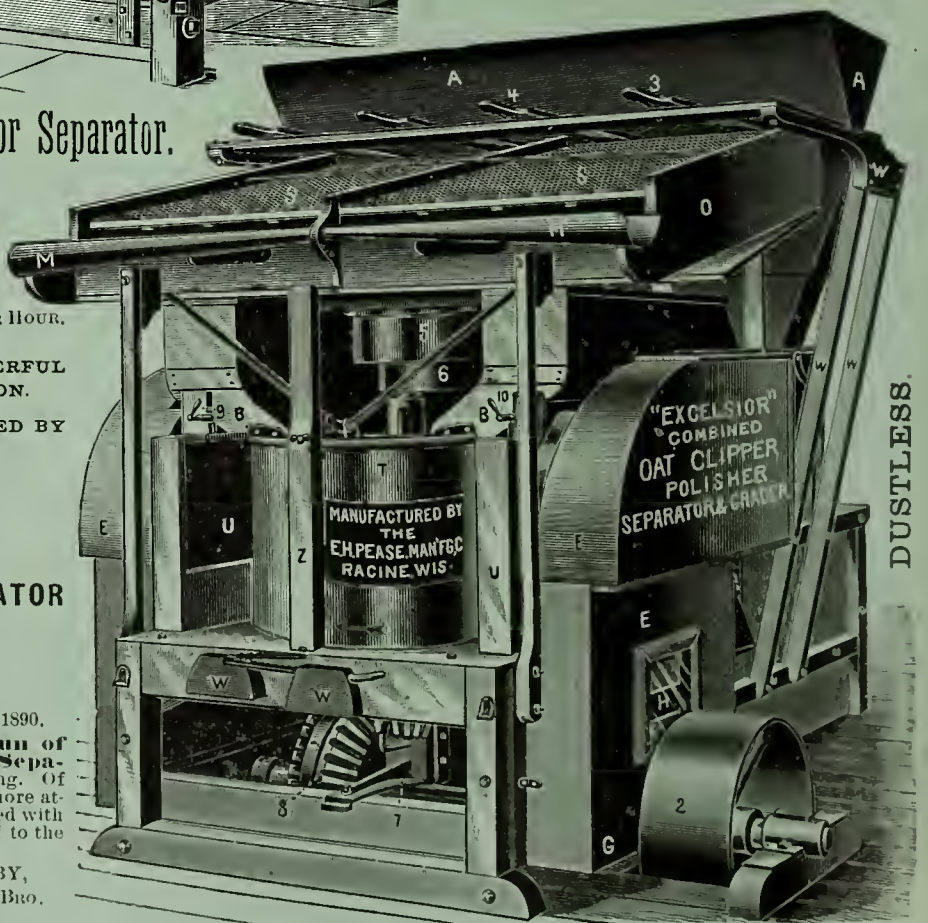
IN THE MARKET.

"ELEVATOR B."

LA CROSSE, Wis., Nov. 6, 1890.

GENTLEMEN:—I have just made a Test Run of Flax over the No. 2 Excelsior Receiver Separator of 775 bushels p-r hour without crowding. Of course, when flax is very dirty it would require more attention or slower feed. We are very much pleased with the machine on flax and timothy. It adds one-half to the capacity of our flax reels and of our timothy mills.

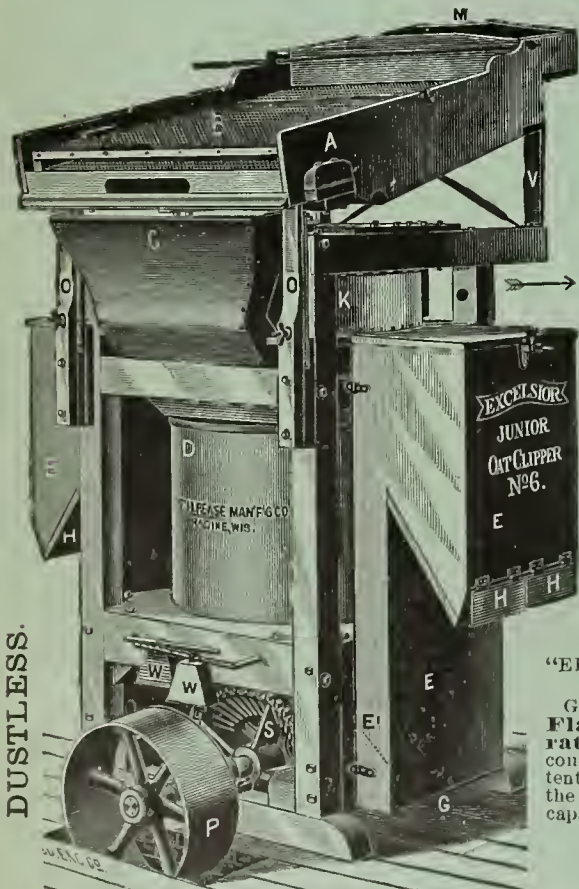
Yours respectfully, W. B. CLISBY,
Foreman for W. W. CARGILL & BRO.



"EXCELSIOR" OAT CLIPPER, SEPARATOR AND GRADER COMBINED;
ALSO POLISHER, SEPARATOR AND GRADER COMBINED.

THIS "COMBINED" MACHINE May be fitted to fill any or all the capacities of a GENERAL DUSTLESS ELEVATOR RECEIVING SEPARATOR for all kinds of Grain:
OR AS A CLIPPER, CLEANER, POLISHER, SEPARATOR and GRADER OF OATS.
OR AS A POLISHER, SEPARATOR, CLEANER and GRADER of Wheat and Barley.

MADE IN 3 SIZES, WITH CAPACITIES FROM 150 TO 750 BUSHEL PER HOUR.



"EXCELSIOR JR." OAT CLIPPER, POLISHER and SEPARATOR
FOR CLIPPING, POLISHING, SEPARATING AND
CLEANING OATS,

OR MAY BE FURNISHED WITH SIEVING, ETC.,
FOR POLISHING, CLEANING, SEPARATING AND
GRADING WHEAT OR BARLEY.

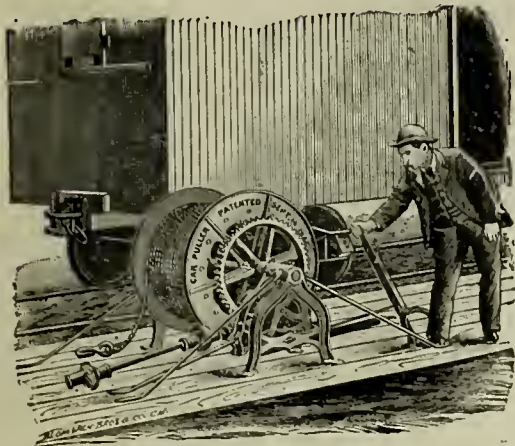
MADE IN 2 SIZES. CAPACITIES, 250 TO 600 BUSHEL PER HOUR.

SEND FOR
CATALOGUE
AND
PRICES
—TO—

E. H. PEASE MFG. CO., RACINE, WIS., U. S. A.

SEE PAGES 289, 290 and 291.

POWER CAR PULLERS

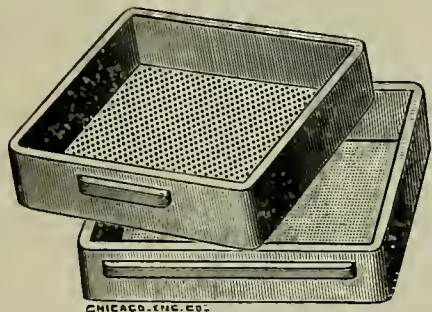


THE W. G. ADAMS POWER CAR PULLER.

COMPACT, STRONG, CHEAP.

Can be set at any angle with Driving Shaft or Rail Road Track.

HANDLES From 1 to 3 loaded cars at once, according to the conditions of the track.



GRAIN AND SEED TESTER.

The upper box fits into the lower one. The zinc or wire cloth, as the case may be, are of different perforations, or meshes, according to the work required to do. When ordering, simply state what the Testers are to be used for, whether for grain or for fine seeds, and what kind, as separate Testers are required for each. A Tester includes a pair (both sieves).

FOR HANDLING CARS

—AT—
**FACTORIES,
 COAL MINES,
 WAREHOUSES,**

**GRAIN ELEVATORS,
 MILLS,**

**MALT HOUSES,
 BREWERIES**

—AND—

DISTILLERIES,

Or wherever necessary to move cars without a Switch Engine. Can be set at any angle with Railroad Track.

We are Makers and Jobbers of all kinds of

MACHINERY and SUPPLIES

—FOR—

GRAIN ELEVATORS and MILLS

SUCH AS

SHAFTING, PULLEYS, HANGERS,
 PILLOW-BLOCKS, CLUTCHES, COUPLINGS,
 GEARS, SPROCKETS, SET COLLARS,
 TAKE-UP BOXES, CRANE-SPOUTS,

LEATHER, RUBBER, COTTON AND LINK BELTING,
 "FLEXIBLE" AND "SWIVEL" GRAIN SPOUTS,
 ELEVATOR BOOTS, BUCKETS AND BOLTS.

"SPIRAL" AND "BELT" CONVEYORS,
 "PLATFORM," "DUMP" AND "HOPPER" SCALES,
 GRAIN SCOOPS, AND POWER GRAIN SHOVELS,

—ALL SIZES OF—

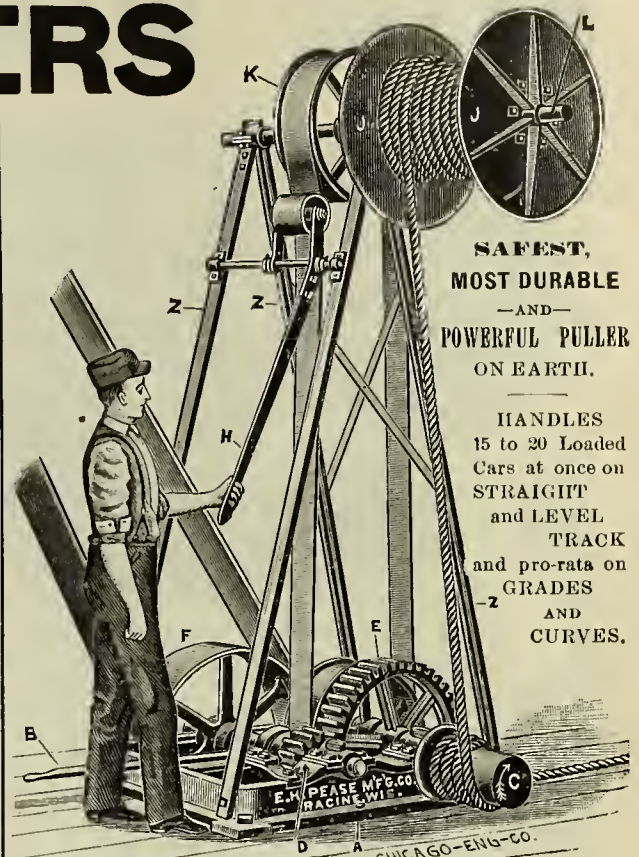
Farm and Warehouse Fanning Mills,

GRAIN TESTERS, SEED TESTERS,
 PERFORATED METALS, WIRE CLOTH.

**Power Car Pullers, Oat Clippers, Dust-
 less Receiving Separators,**

POLISHERS, SEPARATORS, GRADERS,
 FLAX REELS AND SPECIAL FLAX MILLS,
 "OVERHEAD," "SWEEP" AND "TREAD" HORSE POWERS,
 BAG-TRUCKS, SIX-WHEEL WAREHOUSE TRUCKS.

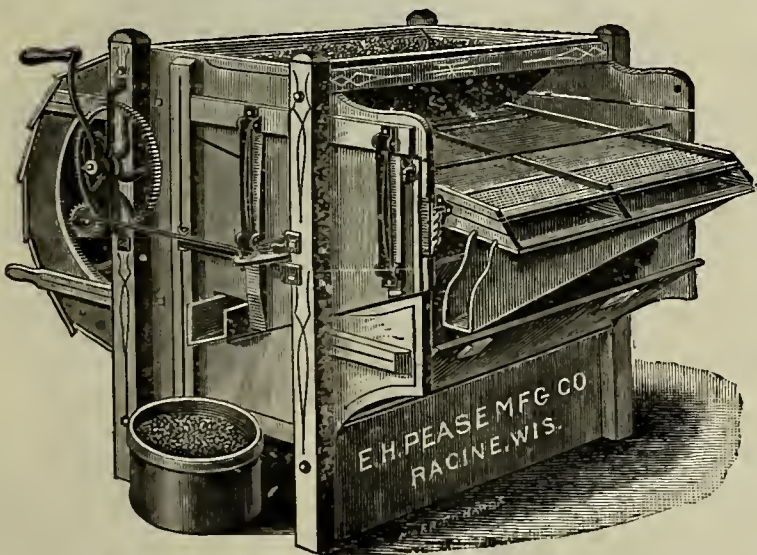
—AND—



"HERCULES" POWER CAR PULLER.
 FOR HEAVY WORK. IN USE BY

Columbia El. Co. Chicago—1 machine
 Wright & Hill, Linseed Oil Works. Chicago—1 machine.
 J. A. McLennan, (El. Contr'r & Builder) Chicago—11 machines.
 W. L. Luce's Elevator. So. Elmhurst, Ill.—1 machine.
 H. Mueller & Co. Chicago—1 machine.
 Soo Ry Co.'s El. Gladstone, Mich.—1 machine.
 P. & W. Ry Co.'s El. Painesville, Ohio—2 machines.
 A. T. & S. F. Ry Co.'s El. Kansas City, Mo.—2 machines.
 Barnett & Record, Minneapolis, Minn.—10 machines.
 El. Contr's & Builders
 Watrous Engine Works. Winnipeg, Man.—1 machine.
 C. A. Pillsbury & Co. Minneapolis, Minn.—1 machine.
 Interior El. Co. Minneapolis, Minn.—2 machines.
 City El. Co. Minneapolis, Minn.—1 machine.
 St. Anthony El. Co. Minneapolis, Minn.—2 machines.
 S. S. Cargill's El. Minneapolis, Minn.—1 machine.
 D. A. Martin's El. Minneapolis, Minn.—1 machine.
 Millington W. Sand Co. Millington, Ill.—1 machine.
 Hogan & Neilson. Seneca, Ill.—1 machine.
 —AND MANY OTHERS.

SPECIAL FLAX CLEANING MACHINERY.



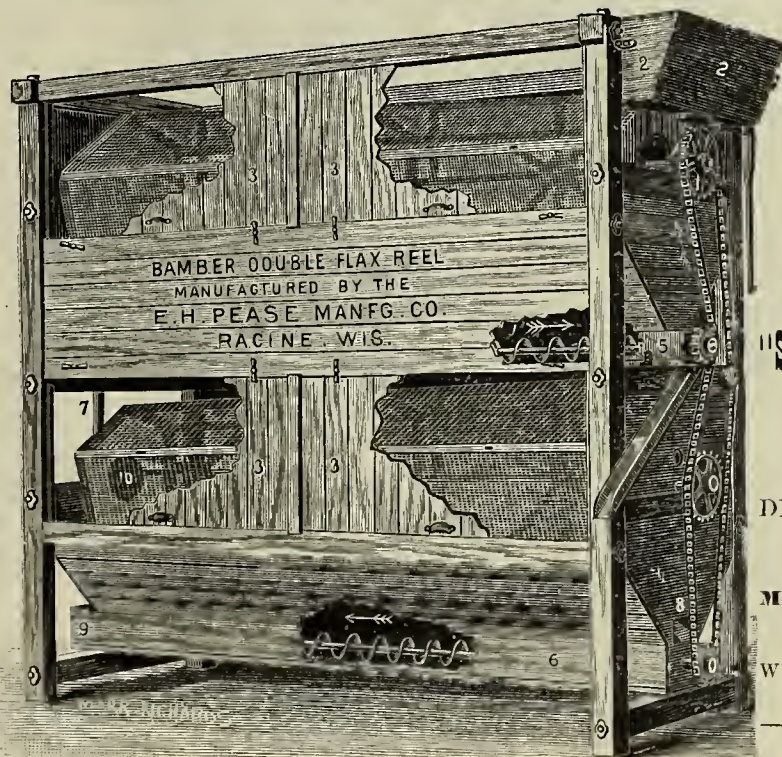
THE "PEASE" SPECIAL FLAX MILL.
 FOR HAND USE OR POWER.

This Mill is represented with a Grain Hurdle in the Shoe, to show that although especially adapted to Flax-Seed Cleaning, it can also be used for all kinds of Grain, making it a universal mill, calculated for all kinds of work. This mill is built upon the same principle as our Side Shake Warehouse Mills, but with more depth of the shoe, in order to accommodate deeper Sieves and a flax screen extending to the extreme front of the mill, a length of four feet. It consequently has greater capacity than any ordinary mill in existence. No flax hurdles are used, as separate sieves work better on flaxseed, and afford opportunities for changing the combinations for different classes of work. This mill is equally well adapted to cleaning, separating and screening Timothy, Clover, and other fine seeds.

NOTE—The No. 0 and No. 00 machines are not fitted to run by hand power.

	No. 2.	No. 1.	No. 0.	No. 00.
Extreme Height.	3 ft. 8 in.	3 ft. 8 in.	3 ft. 8 in.	3 ft. 8 in.
Size over all....	5 ft. 7 in. x 4 ft.	5 ft. 7 in. x 4 ft.	5 ft. 7 in. x 5 ft.	5 ft. 7 in. x 6 ft.
Fltcon. of pulley	27 in.	27 in.	27 in.	27 in.
Driving pulleys..	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.	6 in. x 3 in.
Rev. per minute.	275	275	25	275
Size of Sieves...	3 ft. 2 in. x 33 in.	4 ft. x 33 in.	5 ft. x 33 in.	6 ft. x 33 in.
Depth of Screw.	.4 ft.	.4 ft.	.4 ft.	.4 ft.
Capacity per h'r.	25 to 35 bu.	35 to 45 bu.	45 to 60 bu.	60 to 75 bu.

STRAIGHT OR TAPERED
HAND REELS OF ANY DIMENSIONS
 DESIRED, MADE TO ORDER.



MADE WITH ONE, TWO or FOUR REELS

IN A CHEST AND

with or without

"SCALPING-SHOE"

REELS

OF ANY

DESIRED STYLE

OR

DIMENSIONS

MADE TO ORDER

WRITE FOR PARTICULARS.

Two feet of capacity length for each lineal foot of machine.

Tapered, Hexagon Reels, Revolving on Horizontal Shafts.

All Sprocket Wheels and Drive Chain run perpendicular and Parallel with each other.

The lightest running, best made, most durable reels in the market.

—MACHINES RECENTLY SOLD TO—

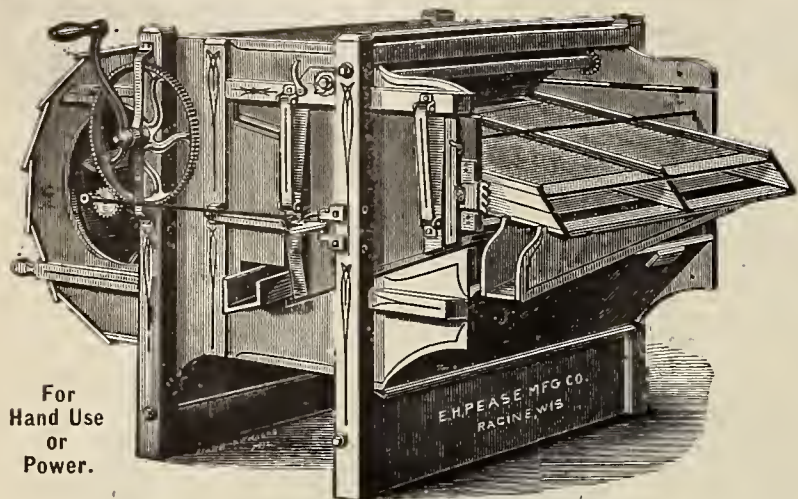
The Albert Dickinson Seed Co. Chicago.
 W. C. Luce So. Elmhurst, Ill. (4 machines.)
 Cargill Bros. La Crosse, Wis.
 Inter-State Grain Co. Oelwein, Ia.
 McMichael & Son. McGregor, Ia.
 J. C. Sanborn & Son. Ortonville, Minn.
 Boor & Benjamin. Ashton, Ia.
 Clark Bros. Manson, Ia.
 D. C. Fairbanks. Dodge Center, Minn.
 Clausen Bros. Cedar Lake, Ia.

AND MANY OTHERS.

E. H. PEASE MFG. CO., RACINE, WIS., U. S. A.

SEE PAGES 290, 291 AND SECOND COVER PAGE.

PEASE WAREHOUSE FANNING MILLS.



For
Hand Use
or
Power.

The "Pease" Side Shake Mills.

The Cut shows the "Right," or Crank side. On the opposite side are tight and loose Pulleys. These mills are not only a first-class mill for general work but are also specially adapted for all kinds of seed cleaning as is attested by the following unsolicited letter, which we publish by permission:

St. Charles, Minn., April 12, 1890.

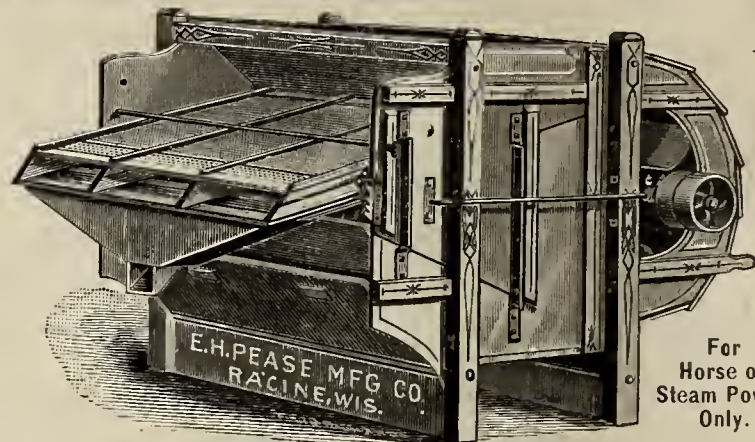
E. H. PEASE MFG. CO., Racine, Wis.:
Gentlemen:—We have started the No. 2 Mill which we bought from you a short time ago. We find it to be the best Timothy Cleaner we ever saw. It cleans very fast and does fine work. It is far ahead of the mill for cleaning timothy. We also use a mill but it does not come up with the No. 2 side shake we bought of you. Your No. 2 will clean timothy about three times as fast as the mill does and does better work than the mill does. Your mill is well built and strong. We would not give our No. 2 "Pease" Side Shake for any two that we ever saw.

Very truly,
J. B. ZECHES & CO.

NOTE—The No. 0 machine is not fitted to run by hand power.

	No. 3.	No. 2.	No. 1.	No. 0.
Extreme Height.....	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.
Size over all.....	5 ft 2 in x 3 ft 4 in	5 ft. 2 in. x 4 ft.	5 ft 2 in x 4 ft 9 in	5 ft 2 in x 5 ft 9 in
Floor to center of pulley.....	25½ in.	25½ in.	25½ in.	25½ in.
Driving pulleys.....	6 in. x 2 in.	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.
Revolutions per minute.....	275	275	275	275
Size of burdles.....	2 ft. 6 in. x 24 in.	3 ft. 2 in. x 24 in.	4 ft. x 24 in.	5 ft. x 24 in.
Capacity per hour.....	100 to 200 bu.	125 to 200 bu.	175 to 350 bu.	250 to 450 bu.

HAVE
THE
LARGEST
SALES
OF
ANY
MADE
IN
THE
UNITED
STATES



For
Horse or
Steam Power
Only.

The "Pease" End Shake Mills.

Particularly adapted for use in Horse Power Elevators where power is limited and close cleaning and grading desired. It is strong, durable and noiseless.

The shoe is supported by STEEL springs, hung from above and vibrated by flexible shake-rods with ADJUSTABLE ECCENTRICS. The shake is from front to back, instead of from side to side.

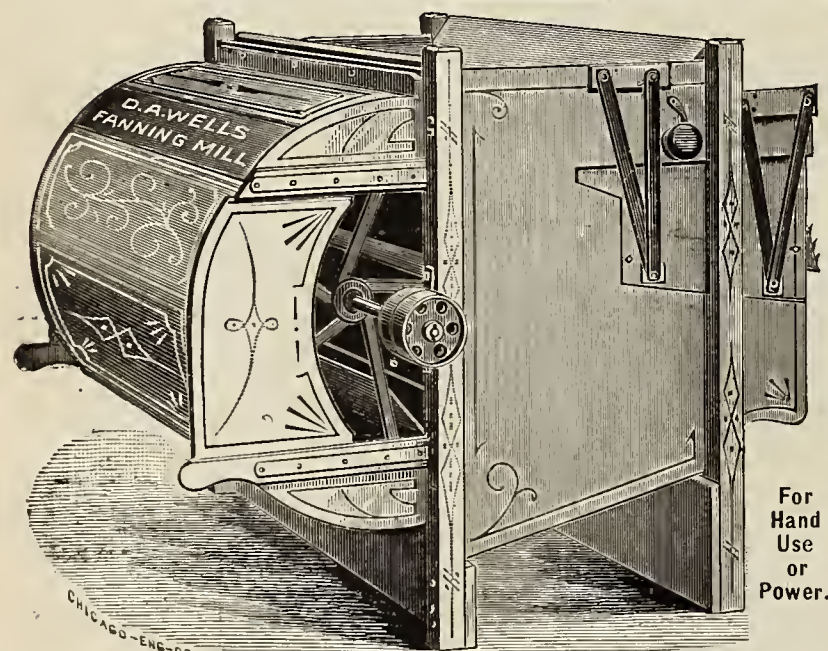
They are fitted with a patent adjustable hopper raiser, not shown in cut, which gives an even flow of grain upon the sieves.

These Mills have MUCH GREATER CAPACITY than any other kind of equal sizes. They are especially adapted for cleaning ALL KINDS OF GRAIN. The side shake Mills are better adapted for cleaning Clover, Timothy, Flax, etc.

NOTE—The pulleys are placed on the RIGHT side of mills or opposite to those showing in this cut, unless otherwise ordered.

	No. 3.	No. 2.	No. 1.	No. 0.	No. 00.
Extreme Height.....	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.	3 ft. 6 in.
Size over all.....	5 ft. 9 in. x 3 ft. 3 in.	5 ft. 9 in. x 3 ft. 11 in.	5 ft. 9 in. x 4 ft. 8 in.	5 ft. 9 in. x 5 ft. 8 in.	5 ft. 9 in. x 6 ft. 8 in.
Floor to center of pulley.....	25½ in.	25½ in.	25½ in.	25½ in.	25½ in.
Driving pulleys.....	6 in. x 2 in.	6 in. x 2 in.	6 in. x 2 in.	6 in. x 3 in.	6 in. x 3 in.
Revolutions per minute.....	450	450	450	450	450
Size of hurdle.....	2 ft. 6 in. x 30 in.	3 ft. 2 in. x 30 in.	4 ft. x 30 in.	5 ft. x 30 in.	6 ft. x 30 in.
Capacity per hour.....	125 to 250 bu	150 to 300 bu	200 to 400 bu	250 to 500 bu	300 to 600 bu

THESE MACHINES CAN BE FURNISHED WITH SPECIAL SIEVING TO HANDLE ANY KIND OF GRAIN OR SEEDS.



For
Hand Use
or
Power.

The "D. A. Wells" Warehouse Fanning Mill.

Designed for locations where power is limited and rapid cleaning is more of an object than close grading.

They have a much larger capacity than our "Pease" Warehouse Mills, but having a larger fan do not require as high a motion and consequently require less power.

These mills are famous as corn and oat cleaners, where plain elevator work is required, and to be done rapidly.

The sieves are so arranged that they may be put in place or taken out independently, thus enabling the operator to quickly arrange any combination that may be required for the various kinds or conditions of grain to be cleaned.

Extreme height.	Size over all.	Floor to center of pulley.	Driving pulleys.	Rev. per minute.	Size of sieves.	Capacity per hour on corn or oats.	Weight.
4 ft. 1 in.	5 ft 6 in x 6 ft.	2 ft. 3 in.	6 in x 2 in	140	57 in. x 26 in.	800 to 1,000 bu	425 lbs.

Office of
WM. DEACON.

GRAIN AND SEEDS,
SANDWICH, ILL., May 23, 1890.

E. H. PEASE MFG. CO., Racine, Wis.:

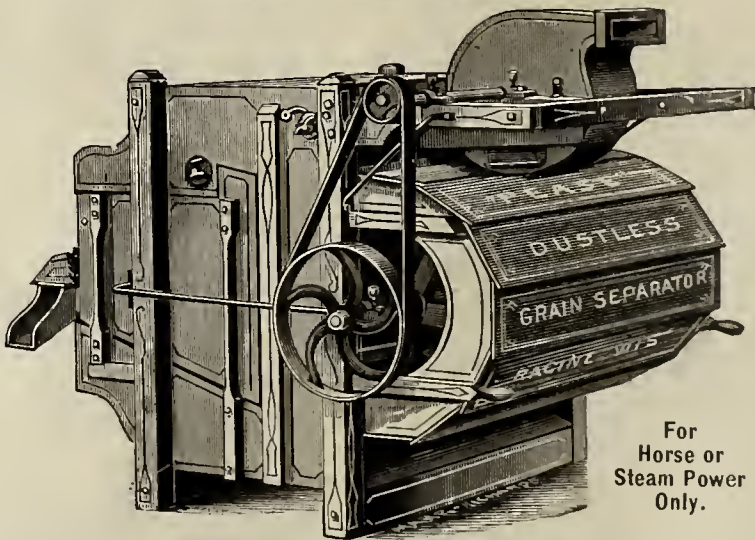
Gentlemen:—Replying to yours of recent date in which you inquire whether my old "D. W. Wells" Fanning Mill is not about worn out and if I will not require another one this season, would say:—The small piece of casting I ordered from you a few days ago to repair same, has put my mill in perfect order, with no reason in sight why it will not be running at the end of time and doing perfect work. This machine was in the Elevator when I took possession THREE years ago, and I am reliably informed has been in almost constant use here for FIFTEEN years previous to that time.

Very truly yours,
WM. DEACON.

WE
ARE
HEADQUARTERS
FOR
ALL KINDS
OF
MOTIVE POWER
MACHINERY,
FITTINGS,
SUPPLIES AND
REPAIRS
FOR
GRAIN
ELEVATORS
AND
MILLS.

—O—
SEND FOR
GENERAL
CATALOGUE
AND PRICES
—TO—

The "Pease" Dustless Separators.



For
Horse or
Steam Power
Only.

CHICAGO, ILL., April 8, 1891.

GENTLEMEN:—The "Pease" Dustless Separator I bought of you March 26, 1891, I sold to Wittman & Co., 66 and 68 N. Halsted St. The No. 00 Machine I bought of you January 19, 1891, I sold to F. Grimsell, 80 W. Erie St., and one I bought of you some time ago I sold to Keifer Bros., North Ave. and Halsted St. These and several others of these "Pease" Dustless Separators I have bought of you are being used chiefly for cleaning corn and oats, and any of them will clean as fast as 8x5-inch buckets, placed 12 inches apart and running at the usual speed, can elevate.

All the machines are giving good satisfaction.

Yours, etc.,
R. D. HILDRETH, Millwright,
53 and 55 So. Jefferson St.

SPIRIT LAKE, IOWA, May 7, 1891.

GENTLEMEN:—Inclosed find draft to pay for the No. 00 "Pease" Dustless Separator just received from you to take the place of the Separator. Day before yesterday we put the mill in place and have been running it on some odd jobs, and the Separator works to our entire satisfaction. The Dustless Fan and Conductor works splendidly, carrying out everything I want it to, and I can put the suction on strong enough to take out grain if I desired. I can regulate the machine just as I want to, and am just more than pleased with it.

Yours truly,
D. L. RILEY.

	No. 3.	No. 2.	No. 1.	No. 0.	No. 00.
Extreme height.....	5 ft. 2 in.	5 ft. 2 in.	5 ft. 2 in.	5 ft. 3 in.	5 ft. 3 in.
Size over all.....	5 ft 9 in x 3 ft 10 in.	5 ft 9 in x 3 ft 6 in.	5 ft 9 in x 3 ft 3 in.	5 ft 9 in x 3 ft 3 in.	5 ft 9 in x 3 ft 3 in.
Height to where grain enters.....	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.	4 ft. 3 in.
Floor to center of pulley.....	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.	2 ft. 3 in.
Driving pulleys.....	6 in. x 3 in.	6 in. x 3 in.	6 in. x 3 in.	6 in. x 4 in.	6 in. x 4 in.
Rev. per minute.....	450	450	450	450	450
Size of hurdles.....	2 ft. 6 in. x 3 ft. 2 in.	2 ft. 6 in. x 4 ft. x 30 in.	2 ft. 6 in. x 30 in.	5 ft. x 39 in.	6 ft. x 39 in.
Capacity per hour.....	125 to 250 bu	150 to 300 bu	200 to 400 bu	250 to 400 bu	300 to 600 bu

E. H. PEASE MFG. CO., RACINE, WIS., U.S.A.

SEE PAGES 289, 291 AND SECOND COVER PAGE.

REMOVE THE DIRT

AND RAISE THE GRADE OF YOUR GRAIN.

MONITOR GRAIN SEPARATORS

The superiority of these machines over all others is best demonstrated by the evidence of those who are using them.

THE LEADING ELEVATORS BUILT LAST YEAR WERE EQUIPPED WITH THESE MACHINES.

By investigating the "MONITOR" you will find that we lead in the following essential features:



- 1st. Ease, and accessibility to all parts.
- 2d. Light running.—Perfectly steady.
- 3d. Even distribution of grain.
- 4th. Powerful, but perfectly controlled air currents.
- 5th. Workmanship superior. Material the best.



BUILT ON HONOR.

OFFERED WITHOUT FEAR.

SHIPPED UNDER THE STRONGEST GUARANTEES.

Taken all in all we offer you the SIMPLEST and BEST Grain Separator ever offered.

BARLEY

Our line of Barley Cleaners is very complete, and it will pay every Barley Shipper to investigate.

CLEANERS FOR ALL KINDS OF GRAIN.

A complete line of these machines can be seen and full information obtained at our Western Branch, 63-65 South Canal Street, Chicago, Ill.

Write for Circular, Prices, Etc.

HUNTLEY, CRANSON & HAMMOND,

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A MONTHLY JOURNAL DEVOTED TO THE ELEVATOR AND GRAIN INTERESTS.

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A NEW TERMINAL ELEVATOR.

The accompanying cut shows the new terminal elevator just completed at Fairport, O., by Barnett & Record of Minneapolis, Minn. The building was erected for the Fairport Warehouse and Elevator Co., who also own large freight warehouses at this point, but is to be used for the Pittsburg & Western and Baltimore & Ohio Railways, who are the principal stockholders in the company. The building has a capacity of 1,200,000 bushels and is said to be one of the finest equipped elevators on the lakes.

leg and discharged onto a large belt conveyor which runs through the viaduct to the main building. The grain is received at the main building and carried to the top by the lofting elevators which have a very large capacity, where it is weighed and carried to the different parts of the storage building by means of belt conveyors, the same system being employed for bringing the grain from the storage bins back to the shipping elevators. All of the weighing, both receiving and shipping, is done on the second floor of cupola, where eight 1,000-bushel Fairbanks scales are used, each provided with the De-

supplied by three of the Butman Furnace Company's boilers.

The elevator is equipped throughout with stand pipes for fire protection and a system of automatic sprinklers. Power from the main elevator to the viaduct is conveyed by means of rope transmission extending through the viaduct to the top of the tower; the power is also taken from the main shaft to the top of main elevator in the same manner.

The building was subject to the most thorough inspection by the railroad officials and pronounced one of the



THE NEW TERMINAL ELEVATOR AT FAIRPORT, OHIO.

As seen by the cut the building is located 180 feet from the dock running parallel with the same, the freight warehouses being located next to the dock and a series of tracks between warehouses and elevator. This made it necessary to erect a tower for the marine leg on the dock front and to extend the viaduct across from the tower to the main elevator.

The building site is on very low, marshy ground, which made it necessary to erect the building on piling, about 3,000 piles being used for this purpose. The marine tower has a leg with a capacity of 15,000 bushels per hour and is equipped with all the modern appliances for handling grain. The grain is taken from the vessel by this

muth patent check beam. There is a shipping track on either side of the building and one running through the center with four shipping bins for each track.

The power is supplied by a 300-horse power engine furnished by the Edward P. Allis Manufacturing Company of Milwaukee. There is also located in the engine room a 75-horse power engine for supplying power for the electric light plant, the entire building, including the docks and warehouses, being lighted by means of electricity, the elevator proper using 250 16-candle power incandescent lights, and the warehouse and docks using 25 2,000-candle power arc lights. This plant was put in by the Edison General Electric Company. The steam is

finest on the lake. A trial cargo was unloaded on Friday, April 24, and everything about the building worked perfectly and the captain of the vessel said he had never discharged a cargo in a new building with as little trouble.

Galveston, Tex., received eighteen cars of wheat April 29, from Sumner and Harper counties, Kansas. The cars were gaudily decorated, and the shipment was intended to boom the export grain trade of Galveston. The Texas Star Mills at that point have used about 200 cars of Kansas wheat, but in order to do a large export trade grain elevators will have to be erected.

SPEED OF ELEVATOR MACHINERY.

BY R. JAMES ABERNATHEY.

When left to their own resources, or when depending upon mechanics who are not well posted in such matters, elevator men frequently put in and start up machines of different kinds without reference to the speed at which the makers intended them to run, with the result of lack of capacity, inefficiency in operation and other drawbacks detrimental to the interests of the elevator proprietors themselves, and often much trouble and large extra expense to the makers of machines, who, as a rule, have to be responsible not only for the good behavior and effectiveness of their machines, but also for the awkwardness and ignorance of the parties who set them up and put them in operation.

No matter what may be the cause for the bad behavior of a machine, the first conclusion invariably arrived at, is, that it is inherent; either a case of total depravity or a natural vice for which the maker is responsible, and he is warned to look after his vicious production or it will be discarded for its general crossness and a good one of some other make will be put in its place. The maker has no other alternative than to look after it at his own expense. It is not quite right, but ignorance recognizes no rule of right especially in such cases and hence the makers of machines must take the consequences.

Speeds are usually established as the result of long continued experimenting and as a rule are about right and should be closely adhered to. The speeds of all machines that go into an elevator are plainly marked on the machines, or if not they ought to be, and the manufacturer that neglects to do so ought to be held responsible for all failures, and the mechanic or whoever has charge of the job of putting them in place should note the fact well and proceed to make calculations for pulleys or other driving devices accordingly, and if not competent to do so himself he should call in the aid of some one who can do it. The greatest drawback to the proper working of a machine is in getting the speed too low. If it be a separator for instance, speeded at 450 per minute and it is set to run at 400, loss is felt at once in the weakened action of the fan which is unable to make the air current separations necessary for good work. It does not, and under other unfavorable conditions cannot clean the grain, more especially if it be very dirty wheat which most of our elevators have frequently to deal with.

One of the first things to do in a case of that kind is to make a careful examination of the speed and if found not correct, make it so, and if correct look for the trouble elsewhere. It can generally be found without troubling makers, if good common sense combined with a little knowledge and skill is brought to bear on the matter. In making calculations for speed it is, as a rule, better to slightly increase indicated speed to allow for unnoticeable belt slippage. A machine may often be run above speed without apparent injury to the results, in fact there is none, if the machine is constructed so as to be under the control of the operator, as all good machines now are. Too great a speed is injurious to the machine in that it shortens its life, and should not be indulged in unless necessary to produce good results.

The capacity of corn shellers depends largely on their speed, and but few will shell up to rated capacity at less than rated speed. Therefore if a sheller fails to shell the quantity stipulated, it can generally be depended on that the speed is too low, always, in fact, if there is no obstruction of any kind to the feed. A bad feeding arrangement sometimes prevents a sheller from getting all the work it is capable of taking care of. That part of the arrangement might be examined first and if found not wanting then the speed must be looked into. If a sheller is rated at a speed of 500 per hour for shelling 400 bushels, it is not liable to shell much more than 300 bushels if the speed be cut down to 400 per hour. I have known even larger reductions in speed and yet the elevator people were unable to tell why their sheller would not work up to capacity.

Long experience has convinced me that it is much safer to err on the high speed side with a corn sheller rather than on the low speed side. Shellers are built strong and can stand high speeds better than can the lighter constructed cleaning machines, and I would advise speeding

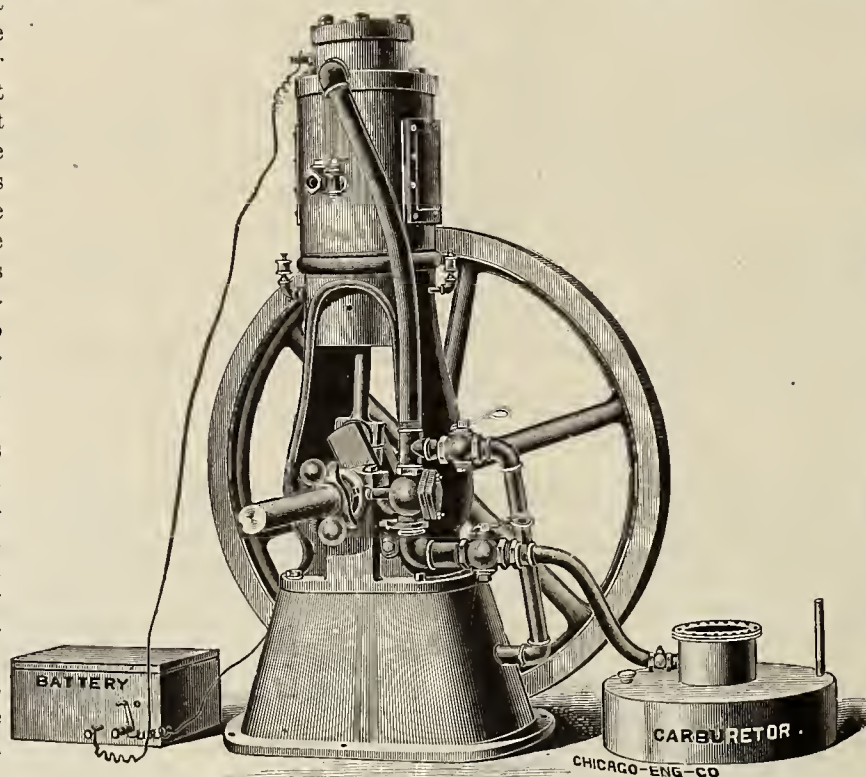
up when capacity is not satisfactory even though it be running up to rated speed and shelling at rated capacity. If more work was desirable I would favor increasing the speed of the old machine, if in good condition, rather than incur the expense of a new machine of larger capacity.

A CALIFORNIA INVENTION.

It is only during the last half of this century that the wonderful developments of California have been realized, and this Golden State has shown to the world that it could produce the products of almost the entire universe, and embrace the climes of both the torrid and temperate zones.

We are familiar with the marvelous growth of its orange groves and vineyards, and the developments of its gold and silver mines, of its fast trotters and millionaire statesmen, but it is only recently that we are made acquainted with the wonderful inventions of its natives.

This is amply illustrated by the great cable or grip systems, now used almost exclusively for propelling our street car lines, and first used successfully in California, where they originated. Again, another invention has come to the front from that state, namely, the Regan Vapor Electric Engine, successfully in use there for six years, and during the past year brought to the East by



THE REGAN VAPOR ELECTRIC ENGINE.

Thomas Kane & Co., Chicago, Ill., and manufactured by them at their works, Racine, Wis.

This is somewhat like a gas engine, but differs from it inasmuch as no flame is used to explode the charge in the cylinder, but substituting instead a spark from a small wet or dry battery. Here, then, is an engine which can be placed in a house, store or barn with perfect safety, requiring no fire, self feeding, safe, capable of being started by a boy and then left to care for itself. The illustration given herewith of upright engine, shows carburetor and small battery complete. While gas can be used for fuel, the Regan Engine runs as well with gasoline, the process of which is as follows: It is operated by means of a vapor drawn into the cylinder by the suction of the piston, and ignited by an electric spark as follows: The carburetor, as shown in the illustration, contains a small quantity of gasoline; this carburetor is connected with the engine by a pipe, as shown. At each revolution of the flywheel a current of cool air is drawn through the carburetor and into the cylinder. In passing through the carburetor it vaporizes a quantity of the gasoline; this, when mixed with more air drawn through the pipe and air valve, forms the charge which, upon combustion, develops the power.

This charge, as already stated, is drawn into the cylinder as the piston is drawn out by the crank and flywheel; on the return stroke it is compressed in the head of the cylinder, and just before the piston arrives at its highest point or "upper dead center," a shoulder or point projecting from it (which is an electrode) comes in contact with a flexible piece (also an electrode), the two compris-

ing the poles of the small battery, thus completing an electric circuit which is broken just as the piston has passed its "center" and commences to descend. At the instant the electrodes separate the spark is emitted, firing the charge. On every other stroke of the piston this is repeated automatically, save when the supply is "cut off" by the governor, which not only controls the engine perfectly, but at the same time "cuts off" the supply of gas so that when less power is being used, proportionately less gas is consumed. The Regan Vapor Engine is built both upright and horizontal, from 1/2-horse power upward, both for stationary and marine purposes.

SUPPLIES AND PRICES.

BY R. JAMES ABERNATHEY.

My attention was recently called to a criticism of a former article of mine in this journal, which some time since appeared in the *Winnipeg Commercial*.

To make my position clear, I will repeat that, while I have made no intentional effort to show that the American surplus, which for years has been a burden to the wheat producers of the world, is being constantly reduced and thus relieving the world's burden in that respect, I maintain that a surplus, in excess of all requirements in America, means a surplus for the whole world, and has a more depressing effect upon values in every market in the world than though the surplus was evenly

distributed over the world. As an excess of stocks in America tends to depress values the world over, so does a deficiency of stocks in America tend to enhance values the world over. The position I then assumed from a carefully prepared statistical standpoint, and which I still hold, is that the end of the present crop year will show the smallest reserve stocks of wheat in eight years, which will tend naturally to greatly strengthen values. If the ordinary course in the movement of wheat had been pursued the diminution of stock would have been more manifest by this time than it is; but, as is well known, large stocks have been shipped by rail from the Pacific Coast to points east of the Rockies, which never before occurred to any extent, and which have kept up the available stocks in the Atlantic territory.

It will be plain to every one, if official crop calculations have been correct, that that method of keeping up supplies is fictitious and not real, as it is merely shifting supplies from one section to another, where it will temporarily have the greatest apparent effect. Sooner or later the Western supply will be practically exhausted and cease to flow; then the condition will be much the same as that of a man who has been stimulating himself heavily for a number of weeks, and suddenly ceases the use of all stimulants. He collapses, becomes flat, flabby and sick. Such will be the natural effect of the stoppage of the stimulation due to the heavy supplies from the West, and all at once men will begin to wonder what has become of all the wheat. The cry is liable to be heard on both coasts. This is not written for a prophecy, but to indicate the probable natural effect of a natural cause.

As to where the prices of wheat are made, it is only necessary to view the situation from a natural standpoint to arrive at a fairly correct conclusion. Now we know that if A has a product to sell, and B is obliged to buy it, then of course A sets the price and B must pay it. For a quarter of a century or more European consumers have depended upon America to make good the deficiency unobtainable elsewhere, said deficiency amounting to from 75,000,000 to 186,000,000 bushels per annum. They are obliged to buy from us each year a quantity of wheat within the range named, and being thus obliged to buy they are, by all natural and commercial law, obliged to pay the price fixed by us, which also substantially fixes the price for the remainder of the world. The prices being fixed in this country, it must necessarily be done at a central market, and that central market is Chicago.

Around Chicago the world's cereal and provision values have revolved for twenty years, and around it they will continue to revolve as long as we hold the balance of power in that respect, or until the center of trade shifts from Chicago to some other point. While many of our foreign friends will be unwilling to accept that statement

as a fact, it is true notwithstanding, and brings a central fact to a central point, which is the object desired.

Having led the reader to that point, I will ask him to glance over the Chicago market quotations—they are always accessible—from 1877 to 1883. I also wish him to note the export trade during the same period. Our wheat values, he will notice, averaged high and the exports were very large. We had wheat to sell; foreigners were obliged to buy it; they needed it for bread; we fixed the price, and they were compelled to pay. That is a perfectly natural commercial law that holds good in all cases. We raised large crops during that period, some of them very large, but owing to the foreign demand there was no surplus accumulation of supplies to hamper our price makers, hence they were able to fix values in a rational way. During that period the speculative bulls controlled the Chicago market, corners were frequent and habitual short selling dangerous. A study of that period may be of use to the reader in the near future, therefore look it over carefully. History repeats itself in commercial as in other affairs, and if we may be permitted to judge of the future by the past, we are now entering upon an era when substantially the same conditions will prevail.

At the close of the period above named, or say commencing in 1884, a decided reaction took place. By a succession of fair to large crops in other parts of the world, the depleted granaries of Europe began to fill up and put on a plethoric appearance; the heavy drafts that had been made on American stocks ceased, and as a result we began to accumulate a surplus and succeeded in piling up an overwhelming stock, the visible reaching the appalling figures of 63,000,000 bushels, with almost as much behind it in the invisible stock. Such a condition could have but one result. This great stock was in plain view of the world, and tipped the world's balance in favor of lower prices. All who knew anything about such matters knew that such a large visible supply was the result of an overwhelming surplus stock of wheat in this country. That condition here very naturally created a feeling of ease in the minds of foreign consuming purchasers, which impelled them not to press inquiries for the comparatively small supplies needed. Naturally enough, as our foreign patrons, who had been taking so much, manifested less disposition to buy, our people, with their heavy loads, became all the more anxious to sell, and the grand raid and the fun began—the reign of the bears and an era of low prices. There is no use in repeating

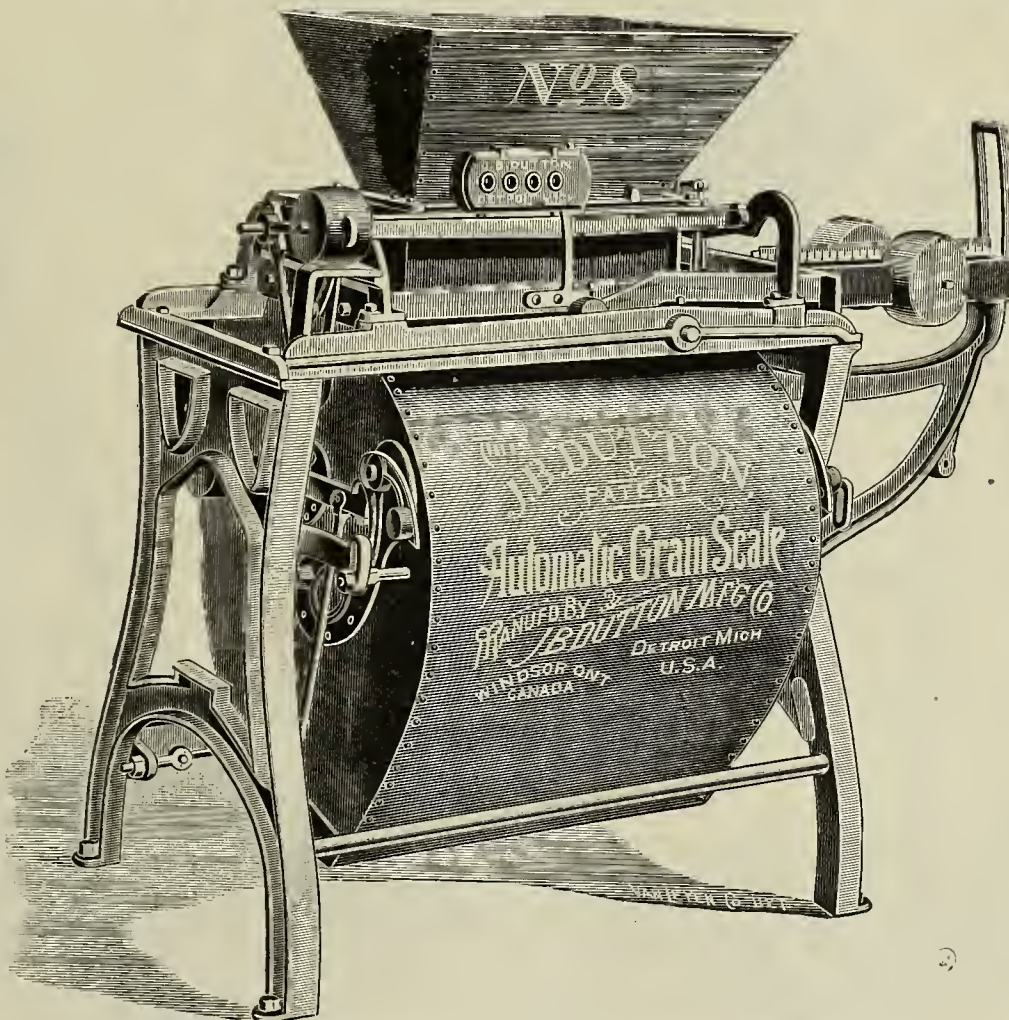
the story, as we all have it fresh in our memories. As before Chicago bulls had made high prices for the world, now the Chicago bears were engaged in making low prices for the world, and they succeeded admirably, as during the period just past wheat in Great Britain touched the lowest price of the century. It did not, however, in Chicago, because of the great cheapening of transportation, of which Chicago and the producers of the West got full benefit.

The *Winnipeg Commercial* charges me with lack of courtesy to foreign customers in charging them with bluffing. They may object to the term, but it is known that they lend material assistance to our home bears, when they can do it with safety, by selling short in our markets. It is also known that when wheat made a rapid advance in Chicago last spring, Liverpool quotations lagged well behind, but when Chicago speculators tried to buy wheat by cable in Liverpool at quoted prices, none could be obtained. In this country we call such manœuvring bluffing—they may call it by a different name there.

I am styled a "furious bull," and that I am when wheat is selling in Chicago from 75 cents downward, and chronic bears still pounding it. When it is selling at a price that makes the producers quickly rich and heavily oppresses the consumers, then I am a "furious bear." I am neither a chronic bull nor a chronic bear, but either bull or bear as in my judgment the best interests of the whole people of this country demand, and that is what

every American ought to be, be he a speculator or not. I used the term chronic bear to distinguish him from the intelligent animal. He is a man that pounds values when there is no value left; a man that when wheat is selling at 70 cents can see nothing ahead but 50-cent wheat, and when it is selling at 50 cents he can see nothing but 25-cent wheat. He is a pessimist and destructionist, and would reduce the people of his country to the lowest level of low-priced human degradation. They are the men I denounce. They can be found everywhere, both on the Boards of Trade and off them. I have no war to make against the intelligent speculative bear. He has a place to fill as well as the bull.

Before closing let us recall an important fact. During the first period here referred to foreigners took from us large quantities of wheat, for which they paid a high price. During the last named period they took wheat from us in small quantities, although the price was exceedingly low. These facts prove that when they need our wheat they will take it, and cheerfully pay the highest prices for it. When they do not need it they will not take it, no matter how low the price may be. It is purely



ONE OF THE "DEVIL'S SATRAPs."—J. B. DUTTON'S AUTOMATIC GRAIN SCALE.

a business matter with them; they buy when they need it, and will not buy when they do not need it. These facts effectually disprove the oft-repeated statement that foreigners will not take the wheat at above certain prices. They always buy when they need, without reference to price.

THEORY REGARDING SMUT IN WHEAT.

An old farmer of Michigan, writing about smut in wheat, says: "I would like to ask if so called smut spores cause a small brown or smut colored bug to hatch and come out of every smut kernel of wheat? If not, how happens the bug to be there? Now, I have a theory as to the cause of smut in wheat, and it is based on that identical bug. It is a well-known fact that some of the great insect tribe use our fruits, vegetables, grass, weeds and leaves to propagate their species, and in all cases where so used the plant is injured by such use. I think smut in wheat is caused by eggs being laid in the kernel when in the milk, which kill the kernel and cause the juices to evaporate and turn to smut."

The Cincinnati *Price Current* has issued its "Statistical Annual" for 1891. It is a neat pamphlet of 64 pages and contains statistical information regarding trade, especial attention being given to the grain and provision trade.

"THE DEVIL'S SATRAPs."

One of the best illustrations of the changes that have taken place in public opinion during the past century and a half, relating to the scope, influence and standing of ingenious men with a faculty for inventing labor-saving devices, is given elsewhere in this journal.

It is a quotation from an address made in the severely straight-laced times of Cotton Mather, and, it is stated, was directed primarily at an inventive Yankee Puritan who had succeeded in producing an automatic machine for fulling cloth. From that quotation it is apparent that any machine that was automatic and labor-saving came under the head of "the devil's satraps."

Just what the illustrious Cotton Mather and his honestly orthodox confreres of witchcraft times would have thought said or done could they have seen one of the J. B. Dutton Automatic Grain, Flour and Feed Scales and Register, it is difficult to fancy. Perhaps they would have put Mr. Dutton, the inventor, on the ducking stool for a bath in Massachusetts Bay, and then probably they would have burned at the stake his automatic scale and register.

There is this fact, however, about Mr. Dutton's invention—it does work and achieves results which are far and away more awe inspiring than any witchcraft, and which compare most favorably with the achievements accomplished by the reaper and mower, the sewing machine, and the other mechanical wonders of modern times. It is a device for use in flour mills, malt houses, breweries, and elevators, and the inventor not only makes broad claims for it, without reservation, but one may find by reference to his advertisement (elsewhere in this journal) that he presents unmistakable evidences that those very broad claims are based on actual results and tangible testimonials. Mr. Dutton's office and factory are at No. 115 East Fort street, Detroit, Mich.

HE BROKE THE TRUST.

If Benjamin Patton of Hicksville O., had the New York elevator pool to deal with, that combine would have to adopt legal rates or receive harsh treatment. Mr. Patton, it seems, has always had a great dislike for combinations formed for increasing the cost of transporting products from the producer to the consumer.

In 1842 Mr. Patton was presiding judge of the Allegheny County Court of Common Pleas in Pennsylvania and was probably the first man in the United

States, while holding that position on the bench, who ever broke up a big trust. The name of this concern was the Canal Transports Company, and its objects were to keep the rates of freight as high as possible. The headquarters of the concern were at Pittsburg and the organizers were all wealthy men who controlled the means of transportation to the East and West. There was a constitution and by-laws, and just so often—every week, I think—the organizers were compelled to tell, under oath, whether or not they had granted any rates lower than the constitution allowed. It was simply a conspiracy to keep up freight rates and thereby impoverish the people, and the wealthy capitalists were indicted on that charge.

I sentenced every one of them to a term of imprisonment, besides imposing heavy fines. I looked upon the matter as conspiracy to defraud the people and treated the defendants as conspirators. My decision was a great surprise to many, and a public indignation meeting was called to denounce my ruling. The citizens responded to the call and most of them had decided views about the formation of monopolies before the chairman called the gathering to order. They discovered upon looking into the matter that a good instead of an outrage had been committed by breaking up the corporation, and they so declared themselves.

A year ago a bushel of Kansas corn would buy two pounds of sugar; now it will buy ten pounds.

SWITCHING AND DEMURRAGE RATES AT CHICAGO.

At a meeting of the committee on reconsignment of grain from Chicago, held in this city April 13, the following rules were adopted subject to the approval of the various roads interested:

Grain in bulk consigned to Chicago, local, will be immediately unloaded in elevators, after arrival and inspection, unless way-billed for "track delivery" or held out by consignees. Grain arriving at Chicago and ordered to elevator or team-track delivery, will be made free. After once being placed, if reordered a charge of \$2 for second delivery will be made. Grain held out and afterward ordered to connecting lines on private tracks will be subject to a minimum charge of \$2 per car for switching. Grain billed for track delivery, and afterward ordered to private tracks or to connecting lines, will be subject to a minimum charge of \$2 per car for switching. No charge for switching will be made on grain billed on track, and which is ordered to elevator on day of arrival (it being understood that twenty-four hours constitute a day, except that grain arriving before 9 A. M. must be ordered

KIDD'S PORTABLE STEEL ELEVATOR.

The mechanism which we illustrate on this page is the result of five years' experience and experiment to obtain a device which would be both practicable and cheap. The inventor believes that he now offers to the public the cheapest, simplest, handiest and best machine yet made for handling grain, and the only one capable of dumping a sled as well as a wagon. The power to operate it costs nothing, as the farmers furnish it. The insurance is nominal, as there is no fire. Each farmer delivers his own load into the crib, bin or car. Crib, storage bins or flat houses can be constructed, and this machine erected, either portable or on tracks or stationary, at the cost, it is claimed, not to exceed one fourth to one-third the cost of ordinary elevators of the same capacity.

A short description of this machine will no doubt be interesting to our readers. The frame of the machine is made of steel or malleable casting, braced and tied as represented, and it is securely bolted together. The wire ropes are guaranteed six tons' breaking strain each, or a total of twenty-four tons, and the chains are of corres-

tees. By a proper arrangement of the chutes it will deliver grain into six different bins or a car from the bins or wagons.

The main advantage gained by use of steel is greater durability, strength, stiffness, portability and better and easier operation. This steel machine will raise the wagon to a height of 52 inches. The rockers on which the platform is tilted gain eight inches additional height, or a total of 60 inches from the ground, while the platform on which the horses stand is but 27 inches high. The wagon can also be tilted to a pitch of 5 feet in 10 feet, which delivers the load into the box without trouble.

The machine is placed on two steel wheels 48 inches in diameter, 6 inch tire under the posts, and 24 2-inch steel wheels, 4-inch tire, under forward end, so pivoted that it can be turned on the hind wheels as a center. The end gates of the steel box are closed by springs and held by catches opened by cams, which operate only at the end tilted. To change the side at which it tilts takes but ten seconds, and no labor. It weighs about 5,000 pounds, and is 20 per cent. stronger than steel bridges are built in proportion to the required strain. Two horses can easily move it.

A reference to the accompanying cuts will enable the



FIG. 1.

KIDD'S PORTABLE STEEL ELEVATOR AND DUMP.

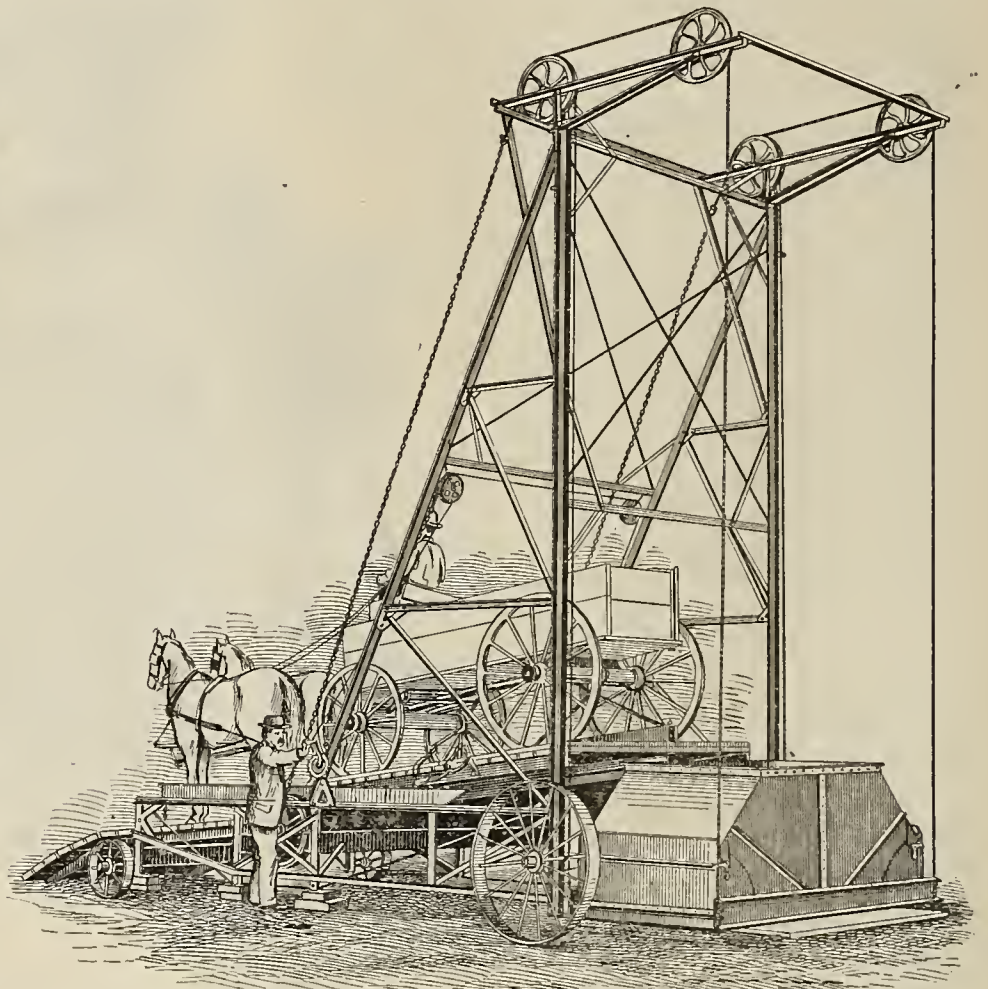


FIG. 2.

out before 6 P. M. of the same day), but such grain will be chargeable with demurrage if delayed on track by consignee beyond the time above specified for purposes other than inspection by committee of appeals. On grain consigned to Chicago, local, that may be actually inspected by committee of appeals there will be no charge for holding out if subsequently sent to elevator. Such grain, however, shall be subject to demurrage charge unless disposed of within forty-eight hours after being placed on appeal inspection track. Cars to be unloaded on team track must be unloaded within forty-eight hours after being placed in position to unload. Cars reconsigned to other lines, private tracks, or to elevators, must be so ordered within thirty-six hours after inspection, provided it be made before 10 A. M. of the day of arrival. If inspection be made after 10 A. M. cars must be reordered by 6 P. M. of the second day thereafter. Delays beyond hours specified in the above rules will subject cars to a charge for demurrage of \$3 per day, or any part of a day thereafter. Grain destined to points beyond Chicago will be delivered to connecting lines free of switching charges. For switching to private tracks, warehouses or elevators not on the tracks of receiving line, additional charges will be made according to location.

In some sections of the country farmers have been greatly benefited by the partial failure of crops in other sections. It's an ill wind that blows nobody good.

ponding strength. The shafting is $1\frac{1}{2}$ inches in diameter, turned the entire length, and is of the best material, with babbitted boxes and three-inch bearings. The dimensions are 10x18 feet on the ground, with posts twenty feet high in a standard machine; but they may be built to any height desired, up to thirty feet. The boxes are of steel $9 \times 4\frac{1}{2} \times 3\frac{1}{2}$, and will hold about fifty bushels of ear corn or 100 bushels of oats level full. The machine will elevate that load without unusual effort of the team, the power being 7 to 1. It will deliver grain within two feet of the height of the post, or at any point lower.

The rockers on the dumping platform are a special feature, by means of which eight inches in height are gained over the ordinary method of pivoting the centers. They allow the wagon or sled to tilt easily, and without jar. The whole machine is put on four wheels. The front ones are pivoted, which makes it perfectly portable, and may be moved by hand or team. It can be changed from place to place in a few minutes. A load of ear corn can be put in the crib in three minutes. Five loads have been put in a crib fourteen feet high in sixteen minutes from wagons. A load of shelled corn or small grain can be put in a bin or car in two minutes from the time the team starts on the dump. Alternate loads of different kinds of grain can be quickly handled into separate bins without mixing, as the box empties itself completely. Potatoes can be loaded into cars by running over screens of any desired grade, thereby screening out dirt and small pota-

reader to understand the method of operation. *Cut No. 1* shows the machine as it is left after elevating a load and ready for the next. The wagon driven on, is chocked by two hooks engaging the hind axle, holding it securely from moving either way. The wagon stands at an average height of 25 inches if the wheels are left on the machine, or 16 inches if taken off, and the machine let down. The grade of the platform is two inches to the foot.

Cut No. 2 represents the elevator box lowered ready to receive the load. The dumping platform, with the wagon, is raised ready to be tilted. The raising is done by the weight of the box as it descends acting through the chains, sprocket wheels and levers. The average height of the wagon from the ground is 52 inches. The short approach platform is automatically lowered as the box descends, and raised as it ascends.

Cut No. 3 shows the wagon tilted ready to dump the load. This is done by turning the crank, which tightens the chain and relieves the two hooks that hold the forward end of the dumping platform. The horses are then backed, and as the platform tilts the chain is wound up, thus holding the wagon at any angle. The full pitch is 5 feet in 10. The rockers on which the platform tilts gives an additional height of 8 inches, making a total of 60 inches from the ground, or 5 feet.

A large number of these machines have already been placed on the market and are in practical operation.

Mr. Kidd has shown us letters from a number of prac-

tial men who have them in use. Mr. L. A. Vasey, Le Roy, Ill., says: "Your machine is destined to create a revolution in the heavy manual labor of handling grain. We put a load of oats into a car in one minute and forty seconds from the time the team stepped on the platform until the load was all in the car. I have had all kinds of horses on it, and a good many different men have driven on it, and all express themselves as much better suited with it than with the ordinary dumps." He runs in competition with a steam elevator, and has no expense for fuel, nor extra labor and insurance, and saves an average of $\frac{3}{8}$ of a cent per bushel, which he paid for shoveling before he got this elevator. W. C. Barth of Dana, Ia., has put five loads of ear corn into his crib in 16 minutes with this machine. Mr. Kidd has also designed a chute which delivers ear corn or shelled grain into the end of a car without shoveling. Messrs. Coy, Cass & Co., Odebolt, Ia., who have one of the steel machines, say: "Your machine works perfectly."

This machine is constructed by John S. Kidd of Des Moines, Ia., who will be pleased to correspond with all parties who wish a cheap, economical and convenient device, and will give any desired particulars.

FLAX AND HEMP.

Hon. Chas. N. Bell, member of the legislature from Ramsey county, has given the flax and hemp fiber question very thorough study, and his observations and investigations are embodied in an admirable and exhaustive report.

Among the interesting features of the report are letters from various parties familiar with the fiber business. The one from J. Carmichael Allen, superintendent of the Minneapolis mills, is of special value, as it announces a home market for fiber. Mr. Allen has had thirty years' experience in handling and manufacturing fibers of all kinds, in both Europe and America, and located in Minnesota in full belief that it offers unsurpassed advantages for the production of fibrous plants, the soil of the state being the best he has ever seen for that purpose. He further says: "Our company has been organized to start a complete system for flax spinning, weaving and finishing linen cloth, and if success attends the venture, arrangements have been made whereby the mill will be extended to a considerably larger size. Our intention is to use, as far as we possibly can, flax fiber grown in this state. I am perfectly satisfied, from samples that I have seen, that the very finest fiber suitable for the best goods, can be grown, and on a small scale has been grown, in Minnesota. Our mill is specially adapted to handle fiber made from tangled straw, and in the use of such fiber, I anticipate, lies the greatest possibility of the rapid development of the flax industry."

"With regard to hemp, this fibrous plant ought to be raised to advantage in this state. The soil is favorable, and nearly every vacant lot in Minneapolis and St. Paul shows a luxuriant crop of the plant growing wild, without cultivation, and I have personally cut a stem fifteen feet high in Minneapolis. The seed of the hemp has not the same marketable value as flax, and in reckoning the result of hemp growing it is safer to count on the fiber only. In Kentucky the average product of an acre of hemp is from 1,200 to 1,400 pounds of fiber, worth about $4\frac{1}{2}$ cents per pound. The cost of the planting, harvesting and retting is about \$25 an acre, so that it can easily be seen that hemp is a very profitable crop. Any good corn or wheat land will grow hemp, and there is a great demand for the fiber for wines and other manufacturing purposes. It is grass-retted, same as flax."

Despite the backward spring, American wheat growers are preparing for a big crop of wheat. The increase in acreage sown to wheat is said to be considerable in the winter wheat states. States that are important wheat growers report greatly increased acreage, and it would seem that only an average season is needed to give the United States a crop of wheat that will fill up depleted reserves and supply the large calls that appear at this time to be inevitable from Europe.

STATE INSPECTION OF GRAIN.

In five states is the inspection of grain made a state affair. They are Illinois, Minnesota, Missouri, Kansas and Nebraska. In 1858 the Board of Trade of Chicago instituted a department of inspection, and it was carried on by them up to 1871. On July 1 of that year it was placed in the hands of the state by the legislature, and has been managed in this way ever since. This change was made on account of the dissatisfaction of the trade at the manner in which the elevators were being run. A system of registration was necessary for the protection of the holders of receipts, and this was not possible without a systematic inspection, which should officially decide the quality of the grain for which the receipts were issued. A further reason was found in the fact that the Board of Trade having at all times an interest in the inspection of the grain was not a disinterested party, and the inspection being an arbitration between buyer and seller it was deemed necessary that the authority controlling it should have no vested interests.

By grain inspection is meant the proper division into established grades, according to its quality and condition. It was first intended only for the grain going into the elevators in order that the owners of the different shipments would get what they were entitled to on its withdrawal. The department is carried on without expense to the

all anxiety as to the tenure of their office, and thus be able to devote all of their time and ability to the duties of the position.

Before certificates of inspection were issued sellers of grain were obliged to wait for their money until shipments had arrived at their destination, and had been inspected. Where grain was sold by sample and the shipper was obliged to guarantee the quality he frequently sustained a loss, being obliged to make good the grade in cases where it did not come up to the standard. Now this is all changed. Chicago inspection is regarded as an absolute guarantee of the quality of the grain. So good a reputation has Chicago in this respect that Eastern dealers find it more convenient to sell upon Chicago inspection, and for that reason large quantities of grain are brought here and inspected and sold by grade to go to the Eastern markets without going into the elevators at all. Thus a man may have 100 cars of wheat on track here sold for delivery in Liverpool. Under the old system he would have to wait for his money until the grain reached Liverpool, been inspected and accepted, and the check or draft was sent back to him. Now he can have his grain inspected and loaded here, and the moment he gets his inspection certificate, bill of lading and insurance receipt, he can go into almost any bank in the city and draw his money. In this way business is greatly facilitated, and instead of being confined to men of large capital gives the small traders a chance.

The first official report of grain inspection was for 1859, and 29,222,225 bushels were inspected. The first year that the state assumed control 139,625,887 bushels were passed upon, and last year the enormous quantity of 290,251,109 bushels passed inspection.

The grain is ordinarily inspected upon the tracks that it comes into the city on, there being a force of men stationed at each one of the roads that regularly bring grain into Chicago. The inspector has no knowledge as to the ownership of any consignment and is consequently supposed to be unbiased in his inspection. Each ear is gone into with a trier, which is a metal tube about five feet long with slots cut into the sides at regular intervals, and which is plugged with a wooden rod called the plunger. This trier is pushed through the grain to the bottom of the car, and the plunger slowly withdrawn, allowing the grain to fall into the different slots. The tube is then pulled out, and the slots show sections of the entire ear. In this way any dishonest loading, where poor grain is put in the bottom, is generally detected, although it is possible to so distribute it as to make detection extremely difficult. In addition to this, wheat is tested for its weight per measured bushel. This is done by filling a test measure to a dead level and at the point upon which it balances upon a graded bar are figures which indicate the weight per measured bushel.

Oats are all tested in this way in light crops where the weight rather than the quality is likely to be deficient. All grain arriving in Chicago is not entitled to an inspector's certificate. That which is too damp, or which contains weevil, or alleged grain composed for the greater part of dirt, screenings and other foreign substance, is not graded at all. This is always bought up by starch and glucose manufacturers and by distillers. The most difficult cereal to grade is barley. To place it where it properly belongs requires a special study of that grain in order to know about what proportion of it will malt, for on this more than on its color depends its value. By far the best barley that comes into Chicago comes from Colorado, the Pacific coast and Canada, but on account of the small quantity it does not cut much of a figure on the market. The finest winter wheat is from Central and Southern Illinois and Kansas, and the best spring wheat from Minnesota and Dakota. Barley comes chiefly from Wisconsin, Iowa and Nebraska. Mr. Price, the chief inspector, says that in all the history of the department he has not heard so little expressed dissatisfaction as during the past year. Appeals from the inspectors have been few and each succeeding year emphasizes the fact that grain which is graded by Chicago inspection is safe to handle at its value.

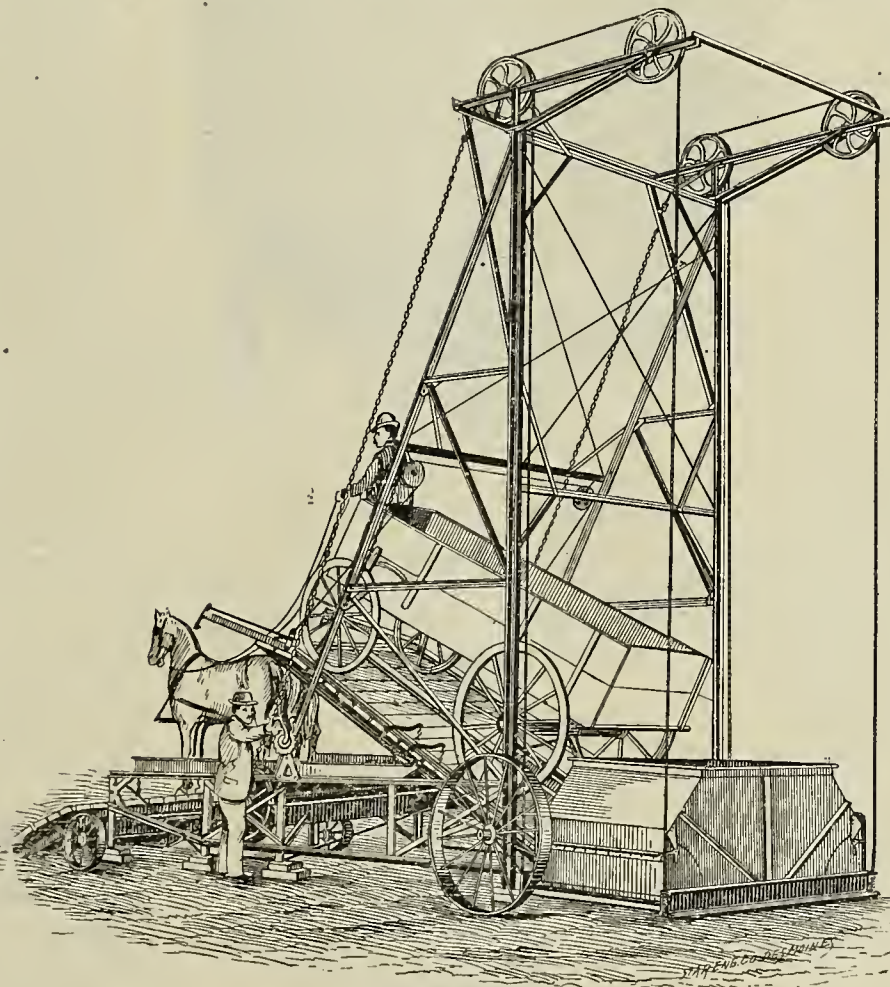


FIG. 3. KIDD'S PORTABLE STEEL ELEVATOR AND DUMP.

people of the state, it being entirely supported by fees provided by law for the work done. The fee, which is 25 cents per car, is fixed by the Railroad and Warehouse Commission, and is raised or lowered from time to time as the state of the department fund may require. During the past fourteen months two reductions have been made. To carry on this inspection requires a force of seventy-seven men, who are under the charge of Mr. P. Bird Price. Connected with the department is an appeal committee to whom a dissatisfied owner may appeal from the decision of the inspector, and the verdict rendered is by law made conclusive to all parties interested. The department is run upon a Civil Service basis, as it requires some years' experience to fit a man for the responsible duties he must perform, and having thus educated him it is the policy of the department to keep him. A novice at the business acts first as a helper to an inspector, and in about a year's time he is a fair judge of corn and oats, and in three years' time he may be trusted to know a good sample of wheat when he sees it. When he once knows the ropes he is made to feel that his position is permanent, and that no outside influence can put him out. This Mr. Price, the chief inspector, says he makes a point of, not because there is any difficulty in filling any man's place, but in order that they may be relieved of

THE CHECK SCALE BEAM AND THE AUTOMATIC DRAFT RECORDER.

The "Check Scale Beam" and the "Automatic Draft Recorder," cuts of which are shown below, are the inventions of Mr. J. A. Demuth, who has been for more than a dozen years the head clerk of the L. S. & M. S. Ry. elevators at Toledo, O. His experience led him to believe that a system of recording weights should be devised which would afford indisputable evidence of a correct record of weights. His efforts were directed at first to the automatic principle as the best means of arriving at a practical solution of the problem. But here the question arose: Suppose a reliable automatic weighing or recording machine could be devised, how many elevator companies would have sufficient confidence in a purely mechanical measure of their grain to use one? "Wheat is good as gold" and the day which sees many men counting out their gold by machinery will probably be frigid, indeed. And further, can any automatic weighing machine, however perfect, weigh more accurately than the ordinary hopper scales? All weights must be obtained by a balance of levers with the load to be weighed. It is plain, therefore, that the automatic machine must embody the leverage principle. It is equally plain that all other features of the automatic scale, aside from the simple leverage principle, are for the purpose of obtaining a correct record of the thing weighed. Therefore the object of all automatic weighing machinery is to obtain a correct record.

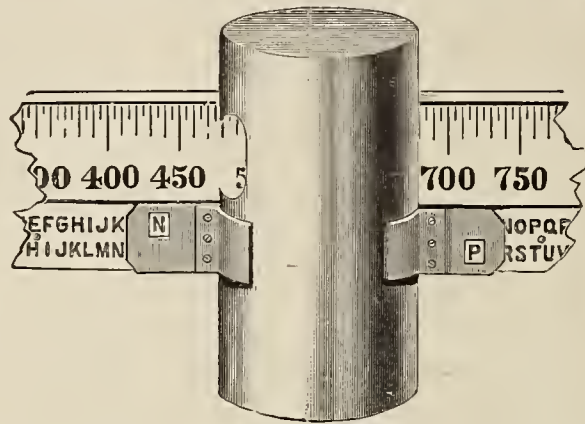
It seemed also that an automatic register attachment to the ordinary scale would be open to the same objections as an automatic scale and register combined; because, if an automatic register is to be wholly depended upon for the weights, the weights after all would be obtained by machinery. In short, these and many other points convinced Mr. Demuth that no mechanical device for weighing can ever be generally substituted for the ordinary scale, and that the only practical plan was to devise a system for proving the record as it is ordinarily made.

With his Check Beam, this is very effectually accomplished. There is no machinery about it. The beam is so constructed that the record taken proves itself. The series of letters as shown in the illustration is so arranged that for every possible weight there is a particular combination of letters. The counterpoise is arranged on the same principle—being supplied with an indexing slide which must be raised before loose weights can be hung on when it falls down upon the weights indicating figures and letters in the same manner as on the beam. The weighman enters the letters with his figures in his scale book. By means of a key furnished with the check beams the letters are, at a glance, reduced to figures, which prove (or disprove) the weighman's entry in figures. Nothing can be simpler than this. The entry is made from three different points on the beam. If they all agree there is no mistake. If one point does not agree with the other two, that one is wrong because the other two balance.

THE AUTOMATIC DRAFT RECORDER.

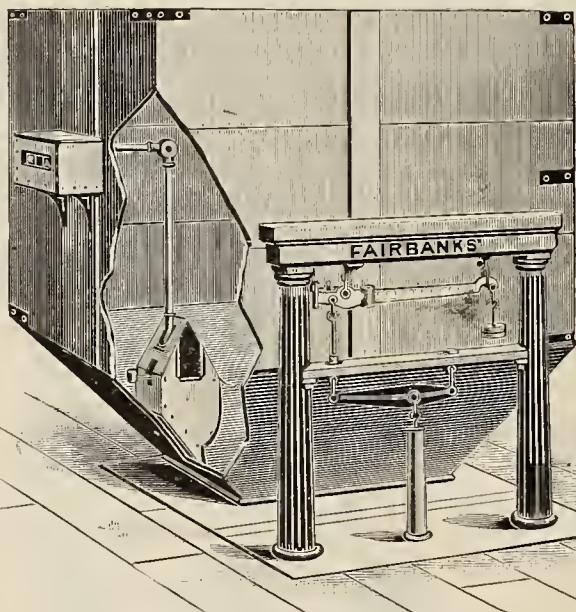
In order, however, to have a complete system, it was found necessary to devise an effectual check on the number of drafts delivered in loading vessels or cars with hopper scales. In loading a vessel there is danger that the weighman and tallyman for the vessel may come to a disagreement. This happens too often. The Automatic Draft Recorder is designed to act in such cases as an impartial arbitrator. It is so constructed that it cannot possibly register twice for the same draft, and it is as certain to register once as grain is certain to run off a polished incline of 45 degrees. Instead of having the drafts shown in figures they are shown in letters—a different combination of three letters for every draft delivered. In this way it is impossible for the weighman who keeps his own tallies to so adjust them as to agree with the recorder. He must report his tallies just as he has them and without any more reference to the recorder than if it were not in existence. Now let us suppose a vessel to be loading at an elevator. The tallying is usually done by the weighman for the elevator and by the first or second mate for the vessel. (We have known of more than one instance where the tallying for the vessel has been left to one of the trimmers.) Suppose now they come to a disagreement. Is it likely they will call up the office to settle the matter? And if they do, the matter will have to be patched up. (We have heard of instances where the

patching has been done without disturbing the office—depends on what sort of stuff the men are made of.) But if the scale is furnished with the Automatic Draft Recorder the truth will out sooner or later, so the weigh-



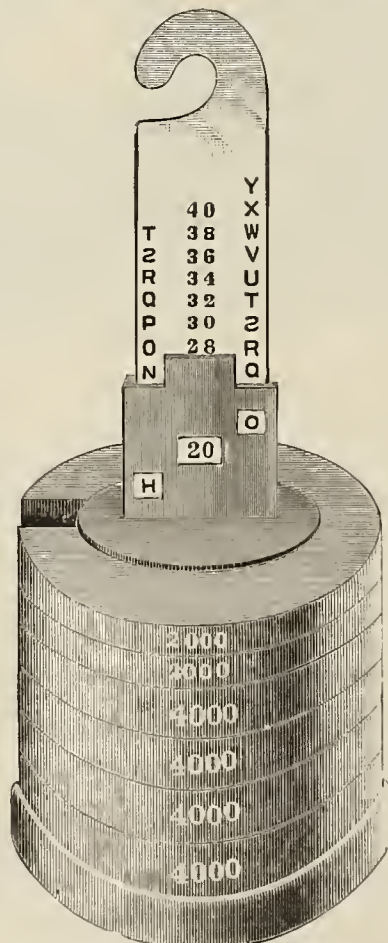
CHECK SCALE BEAM.

man need only call up the office, give in the last combination of letters, and the difficulty can be settled in a few seconds. Whichever tally the recorder agrees with is



HOPPER SCALE WITH DRAFT RECORDER.

correct. The recorder completes the system. It and the check beam have been in use in large marine elevators for several years, where the system has been found to be



AUTOMATIC DRAFT RECORDER.

simply perfect. Both of Mr. Demuth's inventions are handled by Fairbanks, Morse & Co. of Chicago.

The greatest grain crop ever known in Washington will be harvested, if present indications are to be relied on.

BENT AND BENDING WOOD.

Bent wood for all kinds of industrial and mechanical use, has had a steady growth, absorbing one after another of the great mass of manufactured articles made at the present time. About thirty years ago, the writer's father, after months of hard study, invented a dished saw, and an eccentric attachment for swinging the plank, so as to take off the strip on back of sawed wagon wheel felloes and to saw felloes. By this means he could make sawed felloes very rapidly; but soon after he began the manufacture of bent felloes for all classes of vehicles, and the order for bent rims gradually and in a few years, entirely absorbed the rim business, and sawed felloes went out of use entirely. Nearly all of the millions of wheels on vehicles of every description, including agricultural implements, are to-day made of bent rims.

Formerly all chair backs were sawed rounding by all conceivable means, and much money and capital was expended in devising saw machines to do the work. Some one happily thought of the idea of bending them; it did not take long to bring it into general use. To day it would be a great novelty to see a sawed chair back.

From the bent chair back it was an easy step to a bent frame for chair seats, especially for cane and perforated seats. It then became a common feature of chair and seat making, to bend backs, legs and seats, and now the perforated seats, used in school, depot, lawu and church furniture are made of bent wood.

Wagon and buggy seats are made of bent bows; cutter and buggy bodies are made of bent wood; children's wooden toys of all kinds are made in same way, and hundreds of kinds of tools, and handles for agricultural use, and garden tools, are all bent to shape. It saves lumber and time, and cheapens production. Besides the steam acts as a preservative and hardener of the woods, cooks the sap, and allows it to dry evenly and better without checking. A piece of rock elm, or white oak, steamed and dried, becomes as hard as glass, and a steel nail cannot be driven into it without oiling.

Sleigh and cutter runners and stone boat planks were always, in an early day, sawed out of heavy timber, but now the beautiful runners seen on all sleighs, as well as the knees, are universally made of bent wood. Sway bars, the fifth wheel on wagons, carts and hacks, and plow beams and haudles, are all bent wood.

Of course, bending wood is a science; the wood must be steamed just right, with the right kind of steam, or it will be brashy and soft. Nearly all kinds of wood will bend if treated right. The writer bent a carload of black birch double not long since.

The latest use to which the bent wood has been successfully adapted is for the rims or faces of wooden pulleys. It was a difficult work at first to master the rims. They had to be bent for large pulleys from great heavy plank 14 feet long, 4 inches thick and 13 inches wide, and for all the pulleys as wide as the lumber would run.

The largest, strongest and latest improved machinery was constructed by the Menasha Wood Split Pulley Company of Menasha, Wis., who had determined to make bent wood rim for pulleys. They have the largest bending machine in the world. It will bend a rim for a 12-inch diameter pulley in one minute, and the next moment will bend up a great strong, heavy hard wood plank for a 96-inch diameter pulley. It will bend a stack of rims as high as a church steeple in one day. The men who operate the steam boxes and the machine have bent stock for wagons, sleighs and plows for twenty years, and the rims are as square and true and perfect as it is possible to make any rim by any means. They think they have done badly if they break more than one single piece in a week. Now and then the steel straps used with cast iron upsets, to inclose the lumber while bending, will break, and the heavy plank, released from its bend, will fly off and knock the men flat down on the floor, or strike them in the ribs or stomach, or they just barely escape a flying piece of iron, still, they very soon get up and at it again as if nothing had happened; these little knock downs are their pastimes, and add the only variety to the work. Visitors at the pulley works usually stand apart and view these machines from a distance.

When the rims are removed from their steel bending forms they are stayed in shape with wooden straps, then laid away to air dry, after which they are kiln dried;

when kiln-dried they never lose their shape again, but remain exactly as left by the beuding, as if they had grown that way.

The bent rims are all made from hickory or other hard wood and make the best belt surface for pulleys ever discovered, besides they never wear out. This company manufactured 50,000 pulleys last year. They sell them all over the world, and are to-day 2,000 pulleys behind their orders. This seems to be a very fair evidence of the value of bent rims and bent wood for nearly all purposes where it can be used.

PUBLIUS V. LAWSON.

PUBLIC CRIBS FOR EAR CORN.

I believe a warehouse law for the storage of ear corn can be drafted, says Mr. C. T. Brown of Omaha, Neb., and be made of practical use, especially to the producers, and I beg leave to suggest in the rough, what seems to me a plan which, if put in proper shape, may meet those requirements. It is this: Amend the present law so that any one wishing to become a public warehouseman for the purpose of storing ear corn for others in warehouses or cribs may do so, by complying with the law. It should be specified, however, that the warehouse or crib be not more than sixteen feet wide, well covered, and built up free from the ground, and partitioned into sections holding from 1,000 to 5,000 bushels each, each section to be numbered so that parties desiring may have their corn stored separately, and the receipt when given should specify the number of the section in which the corn is stored. The warehouseman should be required to carry such corn fully insured in some good reputable insurance companies at the expense of the owner of the corn, which on an average would not be more than one-eighth of one cent per bushel per annum; fix the rate of storage at not to exceed one cent per bushel for the first thirty days or fraction thereof, and one-half of one cent per bushel for each succeeding thirty days or fraction thereof, thereafter the owner to pay a charge for the shelling and putting on the cars, in addition to the storage, which should not exceed $1\frac{1}{2}$ cents per bushel. The warehouseman to be required to do the shelling for the owner of the corn when required to do so, and in a careful and businesslike manner, and report the amount put into each carload separately, and attend to the duties of shipping and loading, the same as would a public elevator man.

Require the warehouseman to keep proper books of account, and issue the receipts in the same manner as provided in the present law, and also show the shrinkage, which shall be shared by each party in the proper proportion. Require the warehouseman to give a suitable bond for the faithful performance of his duties, based upon the capacity of the warehouse or cribs—say an amount not less than 10 cents per bushel.

I venture to say receipts issued for corn under such a law would be considered good collateral security, and the parties loaning money on such receipts would have no fear of the corn getting out of condition, or out of the cribs, without the surrender of the receipt, or an order from the proper authorities.

This will give the farmer storage for his corn for the first eight or nine months after its harvest without any risk, for less money than he can carry it thirty days in a public elevator, and his receipt will be equally as good for collateral security upon which to borrow money.

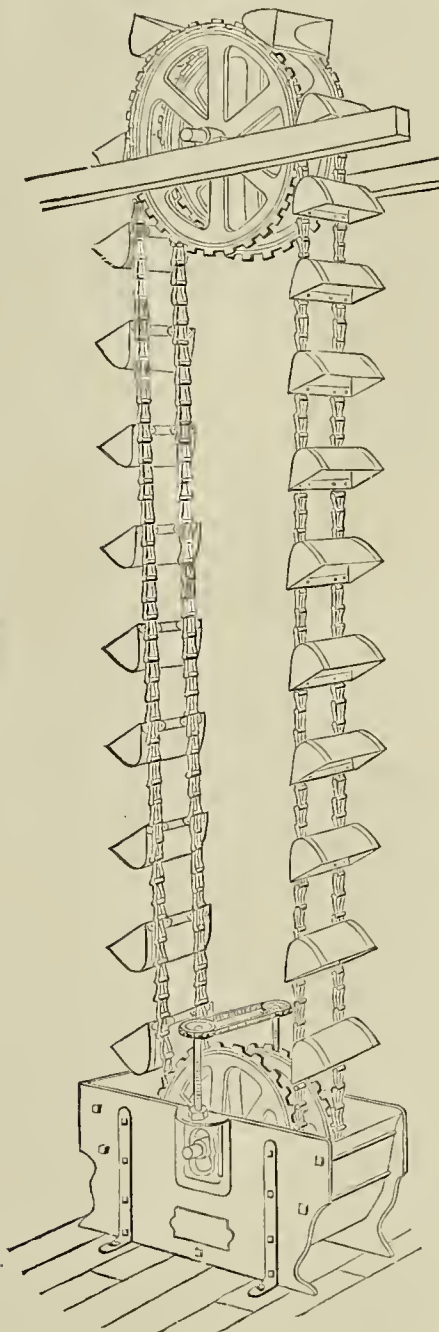
The rate of storage, although very low, is high enough to warrant the investment of capital in such storehouses or cribs, and I believe that if such a law is passed a system of credit can soon be established that will enable the producers to carry a large amount of their corn through the winter months to a time when better prices may be obtained.

Another benefit may be derived from this system of storing corn, which is this: Our railroads have not the facilities for moving the crop as fast as it is usually put upon the market during the winter months, and the result is dealers are sometimes forced to reduce the price much below actual values in order to stop the receipts, for want of storage room, until cars can be had in which to ship. Besides this the markets, by very heavy receipts during the winter months, are often depressed below actual values, as was the case a year ago. Speculators take advantage of these facts to depress the markets as much as possible, all to the detriment of the producer.

Governor Merriam of Minnesota has refused to sign the bill for the erection of elevators on railroad land.

ELEVATING MACHINERY.

A simple and economical method of handling material of all kinds, either in bulk or package, is a necessity in nearly all manufacturing industries. Of all the various means suggested and devised for the accomplishment of this result, nothing has been found to be more satisfactory than the elevating and conveying machinery made of detachable chain belting. In the past years elevators of this class have found a larger field in which to introduce their practicability, and nearly all mill men, gold, ore and coal operators have availed themselves of their use. They are indispensable in mills and breweries for elevating and conveying grains, malt, etc., and can be used to a greater or less extent in nearly every manufacturing industry. Double chain elevators are used in heavy work, and where large quantities of material are to be handled, the single strand elevators, where buckets fourteen inches and less are required. Chain elevators are, however, not confined



to this form, but are made in many different ways to meet the wants of the various materials to be handled. They have a great advantage over the ordinary gum and leather belt elevators, in that they cannot slip, thus losing motion. Again, they are not affected by atmospheric changes, and can be thus exposed to the weather where an ordinary belt would not answer. The chains being detachable, are easily lengthened or shortened. The Jeffrey Manufacturing Company of Columbus, O., who are the manufacturers of this machinery, use in all their work either their roller chain or Mey-Oborn Detachable Chain, both of which are well-known and have long been on the market. This company issues a large illustrated catalogue which abounds in useful information, and which they will be pleased to mail to any one who may be interested.

The Dominion Government has approved the new regulations respecting the grinding of foreign wheat, maize and other grain in bond. The regulations provide for the issue of licenses constituting the mills of licensees into bonding warehouses, and requiring the product of such establishments to be ex-warehoused before it can be taken out, either for home consumption or exportation.

NEBRASKA'S WAREHOUSE LAW.

The warehouse bill passed at the last session of the Nebraska Legislature has been signed by Governor Boyd, and Omaha dealers are preparing for the change. Many wild claims are made for the good effects of the bill. The fact that such a law is on the statute books may satisfy the farmers, but as it now stands it will do them no other good. The following opinions have been expressed regarding it:

C. H. Fowler, treasurer of the Fowler Elevator Company of Omaha, said:

"I regard this bill as one of the best bills for the farmer and for every one else in Nebraska that the legislature could have passed. One of its greatest benefits will be to enable Omaha to reach all markets, north, south, east and west, and furthermore to sell direct to exporters on our own grade. If the Galveston harbor is opened, it will make a good outlet for our cereals. The bill will admit of the establishment of warehouses in the state, where local dealers can store their grain and borrow money upon the receipts issued by such warehouses, as well as in the elevators in larger cities, as all receipts are issued on the basis of grades as shown in the inspection law just passed. We look for Omaha to become one of the best grain points west of Chicago. Our Eastern correspondents say that they will gladly buy our grain at Omaha weights and inspection, in preference to buying at Chicago or St. Louis, as our grades will be worth more for consumptive purposes with a fair crop. Nebraska corn generally brings a premium over other states. I have already received a number of letters from points in Alabama, Tennessee and other Southern points, expressing a desire to buy grain direct from Omaha so soon as things here should be in shape to handle their business. This trade can be reached from Omaha fully as well or better than from Chicago."

Mr. Dean of Swartz & Co., grain brokers, remarked:

"I think very well of the warehouse bill as passed by the legislature, and it will be a good thing for Nebraska. It will tend to make a grain market of Omaha, and will enable capitalists to build big elevators here, where farmers can hold their grain, instead of being forced to sell or store it at outside points. In other words, they can store their grain here, and discount their warehouse receipts at the banks."

E. P. Peck and A. B. Jaquith of the Omaha Elevator Company expressed themselves as follows: "If we have a law regulating weights and inspection, we can sell grain to go to other markets, and our weights and inspection are received without question, but without such a law we are at the mercy of the parties to whom we sell. If it is claimed that our weights are short, for example, we have to make up the difference, and in order to allow for these losses, we must buy on a wider margin. The new law, by providing for official weights and grading of cereals, does away with all disputes on that question, and grain men can operate on a smaller margin, which is of just so much advantage to the producer. It puts Nebraska on the same basis with Minnesota, Illinois, Kansas and Missouri, which have similar laws."

E. E. Cyrus of the Fowler Elevator Company said: "Under the provisions of the warehouse bill local dealers and farmers will be enabled to ship and store their grain at points where there is a resident inspector and a public warehouse. The receipts issued by warehouses for grain thus stored are recognized as negotiable paper in all markets, and where in the past foreign capitalists have advanced money and derived the revenue, our local bankers and capitalists will now be enabled to secure the advantages from such loans. Arguments were used to defeat this bill that outside grain men could derive no benefits from its passage, that it was simply a measure in the interest of Omaha. The facts do not justify the position thus taken. A local dealer at any point in the state, with an elevator or warehouse of small capacity, can ship any surplus of grain coming into his point to larger centers, receive a warehouse receipt for the same and negotiate such receipt with his local banker or through him with larger financial institutions."

Mr. C. T. Brown of Omaha said: "I wish to say a few words in regard to the plan of inspection as proposed in the bill under consideration. We will take last year's crop and the present one for example. There was not one ear in every fifty of last year's crop that did not grade contract, that is No. 2 for export, which is all the dealers expect or want; and our corn is of such good quality that fully 90 per cent. of it is bought on a grade of No. 3

or better, the exporter running his chances upon it grading contract, or No. 2 for export, so that I am safe in saying no one lost a dollar last year by the under grading of a car of corn by any local dealer.

"Some call attention to the rigid grading of corn in the Chicago market during the winter and spring, and that only a small per cent. of our corn will grade No. 2 in the market. I do not wish to be understood as defending the high and rigid inspection of corn in Chicago, but the fact is Chicago is a storage market, and corn put in those elevators at any time as No. 2 is supposed to keep in good condition, and come out as No. 2 at any time thereafter. The warehouse men of that city will not run the risk of carrying through the spring months without heating even our Nebraska corn, hence their rigid grading. That their grading is not as a rule too rigid during the winter months for their own protection is evidenced by the fact that some of those elevators have had hot corn in them during the spring and early summer, the posting of which (as required by this bill, which is merely a copy of the Illinois warehouse law) very often causes almost a panic in prices, which does both producers and dealers more or less damage. For some years past our Nebraska corn has not gone to Chicago, but has been shipped around that market to the seaboard, thereby avoiding Chicago's rigid inspection, and, as I said before, a very small percentage missed grade in the markets to which it was shipped. We are still able to ship around the Chicago market, and I can see no reason why we may not continue to do so, and if our corn should all go to Chicago, what benefit would the producers or dealers derive from having it all inspected at Omaha, Lincoln, Plattsmouth or any other intermediate point, as it would make no difference with the inspection at destination? All our corn is sold on destination grades, and so far as any weight an inspection here would have upon its final grading, the fact that it is Nebraska corn is more in its favor on the other side of the Atlantic, as well as on this, than anything that can be said for it by any local inspection. In the corn markets of the world Nebraska corn is considered the best quality. The cost of maintaining a system of inspection in Omaha, as provided for in this bill, would be not less than \$10,000 per annum on a full crop, all of which is to be paid by fixed charges, to be regulated in such manner as will, in the judgment of said board of transportation, produce sufficient revenue to meet the necessary expenses of the service of inspection and no more. This would have cost on last year's crop something like 60 to 75 cents per carload, and on the present crop, even by reducing the cost of inspection in Omaha to one-half of what it is estimated it would have cost last year, it would cost somewhere near \$2 per carload, the crop being very light. I defy any one to show wherein the producers would have been benefited last year, or would be benefited this year, one single dollar by having had every car of corn inspected by any public inspector. The cost of maintaining the proposed system of inspection amounts to the same thing to the producer as an advance in railroad rates—in both cases the farmer has the extra charge to pay. There is not a public elevator in the state at present, and in view of the above facts there is not likely to be one for the storage of corn, and if there were a dozen of a million bushels each, I fail to see how a producer could derive any benefit therefrom.

"It will cost more to pay eight months' storage and insurance, to say nothing about the risk of heating and getting out of condition, and the interest on the money the farmer would probably have to borrow to pay the freight charges to such an elevator, than would build good cribs on his farm or at the railroad station to hold an equal amount of corn. In the latter case he would have his cribs left, which with proper care would last, in this dry atmosphere, from ten to twenty years, and would be worth something then, and he would have free storage after the first year. It seems to me the law does not meet the requirements of the producer, and only cumber the statutes to that extent. We have no more need of it than we have for a mariue law.

"Our representatives were pledged to enact some warehouse law to meet the requirements of the farmers, but unless it be a law especially adapted to the storage of ear corn it will be a dead letter so far as benefiting the farmer."

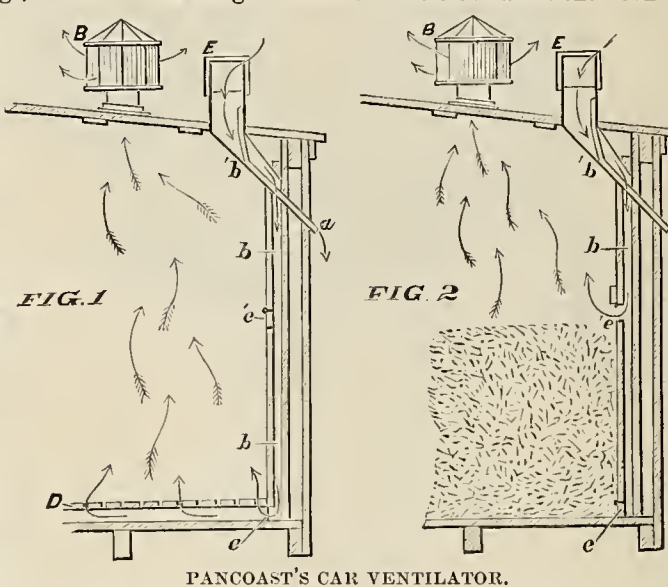
The recent fall in silver enables a good trade to be done in India for pre-midsummer shipments of the new crops of wheat and oilseeds.—*The Miller, London.*

PANCOAST'S CAR VENTILATOR.

Appliances have recently been invented by Richard M. Pancoast of Camden, N. J., for systematically ventilating cars loaded with perishable goods. The inventor claims that cars fitted with his ventilators are pre-eminently grain cars, because they are absolutely storm-proof, and proof against anything except clean, fresh air. With the motion of the train, and also when the car is side-tracked and the air outside is moving, it furnishes a constant change of air. In the case of grain the air passes continuously over the load, and will thus prevent heating or sweating.

The cut given herewith shows a section of a car fitted with these ventilators. The modus operandi of the Pancoast Aerator Car is as follows:

Figs. 1 and 2 are cross sectional views of part of a freight car, showing the application of the vertical system and the appliances. Fig. 1 shows the ventilation as applied in the transportation of fruits, etc., in packages, through which it is desirable and possible to pass a current of air from the floor up. Fig. 2 shows the ventilation as applied in the transportation of grain and such other bulk products, as it is impossible to pass air through. *E* is the intake, with "rain and dirt separator" attachments *b'* discharging at *a*; *a* is the rain and dirt discharge nozzle, which discharges all the rain splash and fine dirt that may enter the screened openings of the intake; *b'* is the "air chute" with the "rain and dirt separator" attachments, which gather all the rain splash and dirt and guide it into the discharge nozzle *a*. The clean air is then con-



PANCOAST'S CAR VENTILATOR.

ducted by the air chute into the air passageway *b* below; *b* is the $\frac{3}{8}$ inch air passageway down the whole side of the car; *c* at the bottom of the air passageway, and *c'* just above the grain line in the air passageway are narrow horizontal openings, either of which may be closed; *D* is the false slatted floor removable in sections, resting on the true floor, on which the fruit packages are loaded; *B* is the storm proof exhaust, which is exhaust in whatever direction the air strikes it, and is absolutely proof against any ingress whatever.

The car doors are closed tight so that no dirt nor light can enter. The only air to enter the car must be through the ventilators for proper handling. The intake openings are screened to keep out the cinders. Any fine dirt and rain splash that pass through the screened openings is handled by the rain and dirt separator within, and rejected through the discharge nozzle below.

For fruits, etc., (Fig. 1) the clean air passes down a $\frac{3}{8}$ -inch passageway *b*, in the side of the car, to the inch and half space between the car floor and a slatted false floor *D*, on which the fruit is loaded. The air is thence forced up through the fruit; and also sucked up by the exhausts in the roof overhead, which discharge the air with all the exhalations from the fruit. Thus a continual current of air sweeps through the fruit from the floor up.

For grain, etc., in bulk (Fig. 2) the slatted false floor, in sections, is removed to a rack in the ends of the car, and the horizontal "air doors" *c'*, just above the grain line, are fastened open, so the air shall then enter there, to ventilate closely over the load; which is the best that can be done for such bulk produce, as the air cannot be circulated through. No light, no dirt, no sweat, no stagnation, and hence no waste therefrom in this car.

New corn shipped in these cars during the hot months or to the Southern states at any time of the year, would surely stand a better chance of arriving at destination in good order than if shipped in common close cars.

LADOGA WHEAT.

A representative of the *Commercial* of Winnipeg, Man., when in Prince Albert recently, came across a sample of wheat which was a surprise to him. He had seen nothing like it among hundreds of samples examined this season in other parts of the country. The wheat we refer to was grown by William Plaxton, whose farm is six miles from Prince Albert. The samples sent out were not hand picked, as is usually the case with such, but just as it came out of the farm granary. The wheat was grown in 1890, which is generally regarded as the most unfavorable year experienced for almost a decade so far as producing a fine quality is concerned. The wheat is of the "Ladoga" variety, which was imported from Russia by the Dominion Government a few years ago for testing in Canada. This wheat, it is claimed, ripens considerably earlier than red fife, which is an important factor in the Northern region. By cultivation in the hard wheat region of Canada this wheat becomes harder, and is generally improved in quality. This was shown by comparing the wheat grown each year in succession from the original seed. The sample sent out was a pure hard wheat, bright and clean, weighing 66½ pounds to the imperial bushel, and yielded about 35 bushels per acre. We requested a statement from Mr. Plaxton as to his experience in growing the wheat, and following we give it in his own words:

"In 1888 I got 3 pounds and sowed it on the 7th of May and harvested it on the 30th of August; threshed 96 pounds of good clean grain. In 1889 I sowed 96 pounds on the 16th of April, covering about an acre of land, sowed broadcast; harvested it on the 6th of August and threshed 14 bushels 68 pounds of first class wheat. The crop was light this year on account of the drouth. In 1890 I sowed five acres on the 22d of April, sowed broadcast about two bushels per acre, and harvested it on the 15th of August and threshed 172 bushels, of which you have a sample. This year (1890) I had Red Fife wheat, White Russian and Ladoga, sown side by side on the same kind of soil. The Ladoga ripened and was cut five days earlier than White Russian, and ten days earlier than the Red Fife."

INSPECTION OF CORN.

It seems that corn often undergoes a change in the cars while en route to Chicago. At the starting point moisture lying dormant, so to speak, in the corn, and impossible of detection by hand, comes to life in the car and permeates the whole lot until it becomes appreciably damp to the trained hand of the inspector. It is indeed a difficult matter for one not scientifically proficient to tell exactly whether corn is dry or not when shipped, and we advise experiments with corn by which to check the reports of the inspector. This can be readily done by taking a thoroughly even and fair sample of the corn to be shipped, and submitting it to a test for shrinkage. From the sample weigh out carefully exactly fifty ounces and place this corn in an ordinary cotton sample bag and allow it to stand for ten days in a uniform temperature of 75 degrees, then weigh again and carefully calculate the loss. One-half ounce will, of course, represent exactly 1 per cent., so that counting the half ounces lost will give the percentage of shrinkage. Corn that will lose from 3 to 4 per cent. of its weight in the time and under the conditions above named (assuming that its quality is such as to entitle it to the grade of No. 2 independently of its condition), may be regarded as "line" corn, about which a difference of opinion among disinterested experts may arise. Corn showing an appreciable margin of per cent. below or above the figures given is readily given its proper grade.

The country dealer must purchase grain in accordance with the prevailing inspection at the receiving and distributing point. In other words, if a great proportion of the Illinois corn received in Chicago is graded No. 3 by the state inspectors the local dealer dare not, for fear of personal loss, buy even the best samples of corn on a cash basis higher than that formed upon the Chicago value of No. 3 corn.—*Farmers' Review.*

The *National Economist*, which claims to be the national organ of the Farmers' Alliance, and which undoubtedly is the organ of the leading agitators, insists upon it that the sub-treasury plan is the true shibboleth of these associations, and that all who fail to pronounce in favor of it are traitors and agents of the "money power." Still many of the associations hesitate to indorse it, and some of them repudiate it entirely.



[We invite correspondence from every one in any way interested in the grain trade, on all topics connected therewith. We wish to see a general exchange of opinion on all subjects which pertain to the interest of the trade at large, or any branch of it.]

CROPS LOOKING FINE.

Editor American Elevator and Grain Trade:—The crops in this district are looking fine, and are one month earlier than usual. There is nothing new in milling at present, only there are to be quite a few mills built in Manitoba this summer. Please send us one sample copy of the AMERICAN ELEVATOR AND GRAIN TRADE.

Yours,
Pilot Mound, Man. BAND & McDONALD.

BUILDING NEW ELEVATOR.

Editor American Elevator and Grain Trade:—H. C. Conner, proprietor of the Star Mills, is building a large grain elevator here on the Missouri Pacific Railway track. The house will be 90 feet long, 40 feet wide and 75 feet high, with a capacity for 75,000 bushels. It will have 20 bins 10x10 feet, and 30 to 36 feet deep; 9 bins 8x11 and 18 to 24 feet deep. Over the 12 foot-driveway will be 3 bins, making 32 bins in all. The building will be fitted up with the latest improved machinery for receiving and handling grain, and will have a rock foundation, corrugated siding and shingle roof. It is to cost \$10,000 and will be completed by July 1. Power for the machinery will be transmitted by cable 400 feet from the Star Mills.

Yours,
Holden, Mo. GEORGE SHIEDENBERGER.

"MUCH IS TO BE DONE."

Editor American Elevator and Grain Trade:—On account of the unusually short crops in the territory of the Kansas and Nebraska Grain Dealers' Elevator Association no active work has been done by the association since last summer. The officers of the association regarded it good policy to remain inactive until another crop was in sight and then to proceed with the initial and general work of organization. No change has been made in the officers of the association.

Much is to be done in the way of correcting abuses of long standing, and by the assistance of the railway companies in the territory several of these grievances can be eradicated; short weights, loss in transit, underbilling, prompt loading and unloading of cars in case of scarcity, routing of grain over connecting lines without so much delay and red tape in procuring through rates, and a uniform bill of lading for all American lines of railway. I think the inspection rules of the Kansas grain inspection department will be the same as the Missouri inspection rules. Please note inclosure of \$1 for the AMERICAN ELEVATOR AND GRAIN TRADE from April, '91, to March, '92, inclusive.

Yours very truly, DEALER.

HOW THE TRANSPORTATION OF GRAIN IS CONTROLLED.

Editor American Elevator and Grain Trade:—When the transportation charge is only 4½ cents a bushel on wheat from Chicago to New York, and lighter grains in proportion, the railroad companies can control nearly the entire traffic by charging canal grain 1¾ cents a bushel more than a reasonable price for transferring.

To show how nearly the railroad-grain-elevator combine has annihilated the Erie boatmen I give the following: On May 5, the day the Erie Canal was opened for season of 1891, there was shipped by rail from Buffalo 460,000 bushels grain, and by canal only 62,180 bushels. This is more than seven times as much by rail as by canal.

Now, please note that that great difference between rail and canal shipments is solely on account of that deliberate, open daylight robbery of 1¾ cents a bushel on grain shipped by the Erie Canal, the people's free waterway.

I am not a socialist, neither do I believe in socialistic methods, but this is an exceptional case, and if the Erie boatmen were to do some desperate deed, no doubt they would be exonerated in the same way as the New Orleans

citizens were. The refusal of railroad companies to comply with laws and court decisions is more than human nature can stand.

Yours sincerely, CAPT. M. DEPUY,
An Erie Boatman.

WHEAT LOOKING SPLENDID.

Editor American Elevator and Grain Trade:—Our growing wheat is just looking splendid for the time. If nothing unforeseen comes along we will have a very large harvest in our section. Please find inclosed \$1.50 to pay my subscription to the AMERICAN ELEVATOR AND GRAIN TRADE and American Miller both, for one year commencing with May, 1891. Wishing both of your publications many prosperous years, I am

Yours truly, T. LLOYD FULMER.
Hatboro, Pa.

TO WESTERN DEALERS.

Editor American Elevator and Grain Trade:—Believing you are on the "right track" in the interests of grain dealers irrespective of location, be that East or West, and looking for our general welfare irrespective of any sectional feeling; believing this to be true, the writer, being an Eastern grain man, would most respectfully ask his brother grain dealer of the West a few questions for information.

First: Why is your inspection of corn so poorly conducted? Grades quoted from you to us are no indication of what we are to receive. Orders from us on your inspection is only a game of chance; nothing is to be depended on. We order forward two cars of yellow corn. They will not agree in three grades many times. We do not understand how this can happen. Where are your Board of Trade inspectors? Are they men that are competent, or are they under some ring and dare not do what is right, as some of our government inspectors are—in to do the bidding of the "boss"?

We are at a great disadvantage here on account of this loose inspection. You cannot find a man in the East but will tell you he cannot depend upon Western inspection of corn.

Second: We would like to ask "Mr. Board of Trade Weighman," "Are your scales adjusted to the United States standard, or to a standard of your boss, viz.: 1 per cent. less than said standard?" Your shippers' invoice guarantees only within 1 per cent., and no redress if you are an elevator weighman, who is final. We have weighed a large number of cars of corn from Western points, and never get over ninety nine bushels on a hundred invoiced. We call this nothing but simple robbery. A car of 500 bushels of good dry corn weighed in Chicago should weigh 500 bushels here—and nothing more or less. We see no redress in this system, only a more rigid system of weights, honestly adjusted, and insist on grain being shipped in sacks of even weight, and no more bulk grain, just as feed is now handled.

We will give the Western weighman a show on the ground that the railroad company seems to have a strong desire to transfer cars in transit from the West, and in these cars we find our greatest shortage. The railroads seem to have a strong desire to handle corn loose. We must admit, and it is a conceded fact that we do not expect to get even with the railroad companies until the same laws govern them that control our express and navigation companies.

Send \$500 to Chicago; the express company must deliver the same, and not within 1 per cent. or less. Send a cargo of corn from Chicago to Buffalo of 100,000 bushels; the company, being a common carrier, must deliver the goods or pay for same, and why not the railroad companies? Are they not common carriers also? And do they not receive pay for the number of bushels they receive? Why should they not deliver the same as the vessel owner? We pay \$75 freight on 600 bushels of corn from Peoria, Ill., and receive 590 bushels. Is this right? We claim not; we should receive the full amount, and no more or less.

Give us clean bills of lading, clean, honest weighing, and clean grain when we pay for the same, and you will greatly oblige us. Inclosed please find \$1 for the AMERICAN ELEVATOR AND GRAIN TRADE.

Yours, AN EASTERN GRAIN MAN.

The proportion of sound corn in last year's crop was not up to the average. The per cent. of merchantable corn last year was 79; in 1889 85; in 1888 82, and in 1887 84 per cent. The crop of 1883 was damaged by frost and only 60 per cent. was sound.

LIMITATION OF GRAIN PRODUCTION.

In the April report of Statistician Dodge of the Department of Agriculture is a thoughtful and full presentation of the question of permanency of agricultural production in this country, from which we take the following:

Some modern disciples of Malthus are wrestling with the limitation of production in this country. Some citizens of an adjoining country of large superficial area in great proportion unoccupied, have sought to impress upon the popular mind, through our press, the idea of near approach of a "pressure of population upon subsistence" which has been in other countries the bugbear of an age of primitive and superficial agricultural cultivation. A corollary of this idea would be the necessity of enlarging our productive area by some form of dependence upon neighboring agricultural resources. It is natural that self-interest, coupled with a partial acquaintance with the natural resources of this country, should lead outsiders to take this view; but there is no such excuse for depreciation of the capabilities of rural production in the United States by citizens of this country.

Europe has four times as many people as the United States, and very few of the countries represented by this Eastern continent fail to produce nearly or quite enough for their own subsistence. All Eastern Europe has an agricultural surplus; and Italy's exports equal her imports. Even the Netherlands, with only two and one-half acres to each inhabitant, require only a few million of dollars' worth of agricultural imports in excess of agricultural exports. France requires from foreign sources only about 7 per cent. of her consumption for a population nine times as dense as ours. Insular and factory-studded Great Britain feeds one-half of her people from her soil, through a labor of one eighth of her population, and her game preserves and pleasure grounds are enough to feed the other half if utilized for agricultural production.

It would seem to be an absurdity to claim a necessity of four times as much area to feed one person in this country as it requires in Europe, with whatever allowance may be necessary for more liberal dietary. The contention becomes the more unreasonable in view of the fact that half of the area of Europe could easily double its production under more general and higher cultivation.

Is our public land all taken up? A considerable part of the arid area is not even surveyed. With the utilization of all the possibilities of irrigation, tens of millions of acres will be opened for cultivation. In lands, as in forest products, the specialist has for years prophesied utter and almost immediate exhaustion, yet lands are still annually patented by millions of acres and forest products are growing while the reverberations of the axe are dying away. It is not denied that the public land area is decreasing rapidly or that the heavy timber of the forest is melting gradually away, but not so rapidly in either case as sensational writers would intimate.

Some evidently assume that the farm area is identical with the superficial area of the original thirteen states—that all available farming lands are already occupied. By no means. Little more than a third of Maine is in farms, and colonization of the most fertile unoccupied areas of that state are in progress. From a sixth to a fifth of the land in the South is utilized for production, and millions of acres of its richest and deepest soils are as yet untouched. One-tenth of the area of Florida is fifteen times the entire breadth of the sugar cane in the United States in 1890, situated several degrees of latitude south of existing plantations, requiring only a system of drainage to become the best cane lands of the United States.

The land actually in farms is only partially utilized in cultivation in every state east of the Mississippi, and the productiveness of cultivated land is far below its possibilities. As a rule, outside of the prairies, the poorest lands were first in cultivation, in violence to the dictum established by town-residing economists of the old school. Our richest lands are the most heavily wooded, the most difficult and expensive to clear, and swamp lands require combination and capital to drain. There are lands now commanding an annual rental higher than the present average value of our farm lands, west as well as east of the Alleghenies, which were less than a generation ago too nearly valueless to find a purchaser willing to pay nominal taxes on them. Millions of acres of the richest and intrinsically most valuable lands of the Atlantic coast, awaiting perfectly feasible drainage, are

yet to be brought into cultivation, while the unoccupied lands of the lower Mississippi are scarcely less extensive. In fact, the entire idea of nearing exhaustion of productive lands is based on the assumption of necessary continuance of primitive methods in agriculture, the cheapest and most superficial culture, and stagnation of all rural progress.

While one class is prophesying decline in relative supply as population increases, another goes to the opposite extreme, and assumes the probability of over-production, the ability to "feed the nations," and practically unlimited production. Such views often originate in lack of information and excess either of patriotic or partisan zeal. While there has been in productive years positive over-production of certain crops, from adhesion to the agricultural traditions of the fathers, preventing diversification necessary to supply old wants not met under primitive agricultural conditions and the new wants of advancing civilization, there is now under production or non-production which has as a very repressive effect on agricultural activities, resulting in rural stagnation and depression.

The March, 1891, report of the Department of Agriculture showed how small a proportion of the agricultural consumption of the European nations is represented by the net imports of each, several of them having a surplus, others a very small deficit, and only Great Britain and Belgium any large dependence on foreign agriculture. Not a dollar's worth of our usual surplus will be taken except to supply an imperative demand. Any overburdening of the market instantly reduces the price, whether in cotton or tobacco, wheat or corn. In the case of meats, there is opportunity for increase of sales, of opening of new markets, as the exportation of fresh meat was initiated less than fifteen years ago, and is still susceptible of great extension.

Foreigners do not buy of us for our advantage, but always for their own; from necessity rather than preference; for cash and not for barter; some nations selling us five to ten times as much as we buy; others buying from us much more than they sell to us, simply because they need the goods and must have them. While no nation has such a surplus as ours, and none can expect to have in the near future, it should be understood that nine-tenths of our aggregate production is consumed at home, and that as population increases the tendency will be toward decrease of the proportion exported, even though the quantity should increase.

It would be possible, under the spur of necessity or of large profit, as when the wheat exports of the war period were doubled while the able-bodied young men of the West were far away upon tented fields to increase the surplus. To find purchasers at a profit for such a rate of increase would now be a more difficult problem. Limitation of demand would lead to a reduction of price and destruction of profit.

Amateur statisticians have been led into erroneous deductions as to the stability of production from the apparent uniformity of areas and products at different periods. The seeming, so far as it is apparent, is not of inexorable necessity due to limitation of land and labor, but to the law of averages and the compulsory influence of price upon product.

Climatic influences cause unavoidable fluctuations, which are evened up in a series of years or in a group of countries in a single year. The areas of winter crops may be decimated, and those of spring planting proportionately increased. If extraordinary demand arises, it is promptly met, and will be in the future as it has been in the past, and land and labor will be abundant to meet it, even if the result should break the record of uniformity in rural progress.

False deductions from agricultural statistics come from partial knowledge of controlling conditions. A very common error of statistical writers, for example, is the assumption of a future rate of decline of wheat exports based upon the reduction since 1880. The status of these exports is shown in the following illustration in periods of five years, showing the average annual exportation:

	Bushels.
1855.....	16,438,909
1860.....	23,599,983
1865.....	47,456,015
1870.....	77,816,458
1875.....	61,601,559
1880.....	109,262,964
1885.....	140,025,954
1890.....	113,205,463

The last period does, indeed, record a movement less than that of its predecessor, though still larger than that

of any other. The smallest volume of the last five years is larger than that of any year prior to 1878, with one exception. In three consecutive years in which exportation reached its highest point no less than 514,000,000 bushels went abroad, about as much as in seven years preceding, and far more than in forty years prior to 1860. There was a good cause for this abnormal movement, a partial failure in Great Britain and France of several crops between 1875 and 1880. The statistician at that time warned wheat-growers that this abnormal demand would not continue, that good crops in Western Europe and reduction of demand would follow. The decline began at once, acreage in this country was reduced, and wheat-growers grumbled at unremunerative prices. Now, going to the other extreme, since the amount has fallen from 186,000,000 bushels in 1880-'81 to 88,000,000 bushels in 1888-'89, agricultural writers are prophesying speedy exhaustion of surplus and early demand for foreign wheat. This deduction is quite as unreasonable as the other. If a responsible agency could guarantee the prices of 1880, wheat growers would guarantee a larger exportation than that culmination of wheat exports. It is a question of price and profit and not of land and labor. The tendency of the times, with increase of transportation facilities and reduction of freight rates in other countries as in our own, is toward relatively lower prices, and therefore toward a partial abandonment of the competition with the cheapest agricultural labor of the world. Only comparatively high prices will therefore enlarge or long sustain the present volume of exportation.

This country has not reached the limit of agricultural production. It has not even approached it. One-third of its area is either too dry or too wet for present cultivation, awaiting irrigation or drainage. Of the other two thirds there is much not included in farms; its farm area is not all utilized, and the cultivated area may become far more productive.

Farm labor is not sufficiently effective; its distribution could be more harmonious and profitable. Prices of cereals have sometimes been reduced by oversupply. Cotton, with a product of 22,000,000 bales in three years, a quantity greater than the production of six years prior to 1860, begins to decline in price. At the same time there is a failure to produce the sugar required, though there is cane land sufficient for an ample supply, and beet-sugar lands ad libitum, without mentioning the possibilities of sorghum. There might be tens of millions of dollars annually coined from various fibers, large extension of fruit growing, and introduction of many economic plants to be made the basis of new industries. The material now produced for food consumption might be put in more attractive form for market, and a large contribution levied upon the gastronomic and esthetic tastes of consumers.

It is not true that the wheat of the world is declining. It is not difficult to prove the existence of 2,300 million bushels as an average, and there is no prospect of decrease. Annual fluctuations, from climatic causes, will produce variation in price, which the distribution of harvests of different climates through the year and increase of international transportation facilities will help to equalize. The United States will continue to produce a surplus for export, until the wheat culture of the plains shall have given place to more varied and profitable culture, and increasing numbers of non-agricultural population shall require for bread the entire crop.

It is proper to say that the tendency is toward a better distribution of crops, and to higher prices and greater profits. The proportion of agricultural labor will decrease, non-agricultural will increase, agricultural production will be more varied, rural intelligence and skill will advance, and the farmer be in a better position to demand and secure an equitable share in the net proceeds of national industries.

The Winnebago Farmers' Alliance presented a petition to the Iowa Railroad Commissioners recently, to require the Minneapolis & St. Louis Railway to grant the alliance the privilege of erecting sheds along its track, which the railroad company had refused to do. The alliance proposed to do a purely co-operative business, using the sheds only as a warehouse, and it would be unfair to regular dealers. The commissioners made an order directing the railroad company to grant the privilege in an elaborate decision, in which a supreme court decision was cited. After the order had been made the commissioners discovered, much to their sorrow, that the supreme court case was decidedly against them.

Trade Notes.

The man who tries to advertise
With printer's ink consistent,
One word must learn, nor from it turn,
And that one word's persistent.

The prime object in advertising is to create a demand; the secondary one to supply that demand when it has been created. And yet how often is the latter portion overlooked.

The Westinghouse Machine Company reports the appointment of a new general agent for the state of Durango, Mexico, in the person of Mr. T. F. Wetherbee, with headquarters at the City of Durango.

The Garry Iron and Steel Roofing Company, Cleveland, O., manufacturers of iron and steel roofing of all kinds, siding and ceiling, iron shutters, conductor pipe and gut-tering, metallic paints and cement, etc., have issued a price list of their specialties, also a new illustrated catalogue.

Milton F. Williams & Co. of St. Louis have not as yet got thoroughly settled in their new quarters at 2705 North Broadway. They report an active demand for brick machinery and friction pulleys, and have as much as they can do to supply it. Their shops will be in full working order in the next few days.

There is no royal road to fortune. Every man who has this goal in view must expect to find plenty of hard, uphill work on the way. Advertising will not make a fortune for you in a day, but if done judiciously it will pay handsomely in the long run. If it will pay you to do business, it will pay you to advertise it.

James Bell of David City, Neb., dealer in grain and flax, with elevators at David City, Shelby and Strousburg, has invented a flaxseed cleaning machine. Six years ago Mr. Bell put an advertisement in the AMERICAN ELEVATOR AND GRAIN TRADE, offering \$500 for a flaxseed cleaner, but was unable to procure a satisfactory machine, so he determined to make one, and now has a perfect machine. Our readers will soon be favored with an illustrated description of this machine.

Don't expect an advertisement to bear fruit in one night. You can't eat enough in one week to last you a year, and you can't advertise on that plan either. People who advertise only once in three months, forget that most folks cannot remember anything longer than about seven days. If you can arouse curiosity by an advertisement, it is a great point gained. The fair sex don't hold all the curiosity in the world. Quitting advertising in dull times is like tearing out a dam because the water is low.

The Sykes Iron and Steel Roofing Company, Chicago, Ill., are now very busy with early spring orders, and have recently made carload shipments to St. Paul, Denver and Baker City, Ore. They have a 12 ton order of heavy gauge beaded steel ceiling for the Harvey Steel Car Company, Harvey, Ill., same to be used in steel car construction. Inquiries and orders West, Northwest and Southwest for the well-known Sykes roofing are reported by them to be numerous, and the prospects for exceeding their large business of former years exceedingly bright.

Chas. F. Shedd, an old elevator man, formerly of Fairfield, Neb., has been spending some time endeavoring to interest capital in inventions made by him relating to the storage and handling of grain. His devices comprise a portable dump and elevator for filling high cribs and bins with grain; a portable drag belt or conveyor and elevator for drawing the grain from these cribs and bins to the corn sheller, wagon or ear; a portable wagon scale and office, a portable elevator for transferring grain from one car to another, or from bin to ear, a portable grain bin holding 500 bushels; improvements in circular, stationary and portable cribs and roofing for same, and in air-tight bins for treating hot and fermented grain. This apparatus is designed more especially for handling grain in the country, and particularly corn, and by its use a great saving in both wastage and labor is claimed to be possible. Mr. Shedd has been at work on this problem for the past fifteen years, and feels sanguine that he has worked out something that will be of inestimable value in handling our crops, and particularly that of corn.

A greater acreage has been sown with wheat in the Canadian Northwest than ever before.

Queries and Replies.

Questions and answers are inserted under this head free of charge, and all are invited to avail themselves of this column.

No. 53. Grain Warehouse.—Can some readers of the AMERICAN ELEVATOR AND GRAIN TRADE inform me as to the best plan for a large granary, intended to store grain from October to May? Has any book been published on the subject?—A. B. C.

No. 54. Telegraph Code.—If any of the readers of the AMERICAN ELEVATOR AND GRAIN TRADE can give me any information about the Underwood telegraph code, and especially the address of the publisher, I will be much obliged.—DEALER.

No. 55. To Splice Belts.—I understand that belts are sometimes joined at the ends so as to be practically and apparently endless, without laces, rivets or pegs of any kind. I have a few troublesome belts that I would like to join in this way, and if some reader of the AMERICAN ELEVATOR AND GRAIN TRADE would tell me how to make a neat splice, I would be very much obliged.—A TYRO.

No. 56. Conducting a Line of Elevators in Co-operation.—Can any of the readers of the AMERICAN ELEVATOR AND GRAIN TRADE give me any information as to whether a line of elevators could be or ever has been run on the co-operative plan, giving the buyers an interest in the business and a share in the profits? Perhaps some readers would enlighten me.—Yours truly, FRANK E. CRANDALL, Sioux Falls, S. Dak.

No. 57. Petroleum as Fuel.—Will some of the readers of the AMERICAN ELEVATOR AND GRAIN TRADE please give us some information in regard to burning natural oil as fuel for generating steam? What is the best method of application? How does the cost of the same compare with that of wood at from \$2 to \$3 a cord? Any information will be thankfully received.—Yours respectfully, BAKHAUS & KUENZELS, New Bremen, O.

NEW GRAIN LAWS FOR MINNESOTA.

During the last session of the Minnesota Legislature a number of bills affecting the grain trade of that state were introduced, but most of them failed to pass. The bills passed provide that all common carriers in the state shall, upon reasonable request, furnish transportation for all wheat or other grain product, whether stored in elevators or warehouses, or offered for shipment in bulk or otherwise, without discrimination. The common carriers are also required to keep a complete register of cars, which registers shall always be open for public inspection. In all controversies the burden of proof shall rest with the common carrier seeking to excuse itself for its refusal or neglect to furnish cars. Suitable wheat-shipping cars must be weighed and sealed by the company, and safely transported to the consignee. The station agent may, on the application of a shipper for cars, collect not to exceed \$5 for each car so ordered, to be paid to the common carrier in case the car be not loaded and ready for shipment within thirty-six hours from the time the car is placed at the shippers' service, Sunday excepted.

At all stations where during the preceding year the company receives 100 carloads of farm produce, track scales for weighing must be provided; such produce to be weighed at the expense of the railroad. These scales shall be subject to the test of any authorized inspector when required by the Railroad and Warehouse Commission, the expense to be borne by the warehouse proprietor if the scales are found to be incorrect, but not otherwise. Compliance with the law can be secured by the warehouse commission by writ of mandamus, and the issuing court may award costs, including counsel fees. In case of loss in transit, suit may be brought against the common carrier in any county through which the road lies, and the complainant may obtain judgment, costs of prosecution and reasonable attorney's fees. Every elevator or warehouseman receiving wheat for storage or shipment must, after weighing the wheat, load it promptly and without discrimination or delay, when requested to do so, providing cars are furnished, and shall permit the

common carrier over whose line the wheat is shipped, and the owner or agent thereof, to see that it is properly and accurately weighed. Track car scales must be put in and maintained at points of transfer. The warehouse commission is empowered with the duty of seeing that the provisions of the act are complied with.

A NOVELTY IN ADVERTISING.

The Westinghouse Machine Co. has started out on a rather unique advertising campaign for the year. It has contracted for ample space with a number of the most prominent class papers in the country (of which, of course, this publication is one), and during the year it is the intention to publish twelve different advertisements, which, taken together, will give the reader a fair though brief history of the company's operations. Thus the first card (which appeared in April) was intended to impress the reader with the following facts:

- 1st. That four types of engines are made.
- 2d. That the goods are made to hardened steel templates, and are consequently interchangeable.
- 3d. That both engines and repairs are carried in stock.
- 4th. That all goods are sold through the medium of resident agents in every part of the civilized world, with the name and address of each.

The space in May is devoted solely to a statement of "A few points which seem to have won public favor."

In June an attempt will be made to briefly show the difference between the Westinghouse and other engines.

Later illustrations will be given of the four types of engines made, together with the date of birth and the number sold of each up to that date. Following these an attempt will be made to show the character and intelligence of those who use the engines. It is probable that some few of the more prominent installations or plants may also be described, and perhaps illustrated.

If any one will therefore have the courage, the fortitude and the patience to read these twelve cards, it is safe to say that he will, at the end of the year, have a good general idea of what this company has done, and is now trying to do.

VALUABLE BOOKS FOR GRAIN DEALERS.

The following standard works will be sent, postage paid, on receipt of prices given:

ROBINSON'S TELEGRAPH CIPHER.—The publishers have recently revised this excellent work, and we are now prepared to supply the trade. Cloth binding, \$1.50; leather.....\$2.00

CLARK'S VEST POCKET GRAIN TABLES.—A very useful and handy little book for grain buyers; to be used in reducing to bushels any quantity of grain or seeds up to 100,000 bushels. Size 2½ by 8½ inches, 16 pages, leather binding. Price.....\$1.00

CLARK'S GRAIN TABLES.—This work is published in several different forms, for use in different lines of business. In these tables pounds are reduced to bushels so that a buyer can quickly determine the correct number of bushels in a load without doing any figuring. Their use effects a saving every day of more than time enough to pay for them. The edition intended principally for reducing team scale weights to bushels contains nine tables, and is bound in paper. Price 50 cents. This will be found invaluable to country buyers. A new edition, intended for shippers and commission merchants, reduces any quantity up to 64,000 pounds to bushels. It contains sixteen tables, and is neatly bound in leatherette. Price.....\$1.50

For any of the above, address

MITCHELL BROS. Co., 184 and 186 Dearborn street, Chicago, Ill.

The Kansas Agricultural Department says the condition of winter wheat in the eastern half of the state is above the average. Chinch bugs are reported to be numerous in Butler, Chautauqua, Labette and Sumner counties. The eggs and larvae of the Hessian fly are found in the early sown wheat, and are doing some damage. As the wheat was sown late in the western half of the state, but little complaint has been made from the Hessian fly there. In some central and many western counties a considerable area was sown to wheat without plowing or cultivation of any kind, and as a rule this wheat is in bad condition.

LATE PATENTS

Issued on April 14, 1891.

GRAIN CLEANER.—Frank M. Shaw, Minneapolis, Minn. (No model.) No. 459,198. Serial No. 371,049. Filed Nov. 11, 1890.

GRAIN METER.—Charles S. Beggs, Ashland, Ill. (No model.) No. 459,213. Serial No. 376,123. Filed Dec. 29, 1890.

BALING PRESS.—John M. Sanders, Dalton, Ga. (No model.) No. 450,301. Serial No. 363,125. Filed Aug. 26, 1890.

GRAIN CAR DOOR.—Charles A. Schroyer, Chicago, Ill. (No model.) No. 450,430. Serial No. 373,574. Filed Dec. 4, 1890.

COAL OR GRAIN BIN.—William Walker, Scandia, Kan. (No model.) No. 450,267. Serial No. 354,392. Filed June 5, 1890.

PORTABLE CORN CRIB.—Charles I. Cook and Henry M. Britton, Odebolt, Ia., assignors to themselves and Albert E. Cook, same place. (No model.) No. 450,505. Serial No. 357,974. Filed July 7, 1890.

PORTABLE CORN CRIB AND GRANARY.—Charles I. Cook, Albert E. Cook and Henry M. Britton, Odebolt, Ia. (No model.) No. 450,506. Serial No. 360,334. Filed July 30, 1890.

FREIGHT OR GRAIN CAR DOOR.—George C. Dougherty, Quiney, Ill., assignor to John T. Smith, Samuel H. Whitsitt, Louis H. Berger and Louis G. Ost, all of same place. (No model.) No. 450,559. Serial No. 366,918. Filed Oct. 3, 1890.

BALING PRESS.—William H. Howard, Pana, Ill., assignor of one half to Edwin S. Davis, same place. (No model.) No. 450,585. Serial No. 371,456. Filed Nov. 14, 1890.

Issued on April 21, 1891.

CORN SHELLER.—William C. Langenau, Brooklyn, O. (No model.) No. 450,639. Serial No. 372,107. Filed Nov. 20, 1890.

FANNING MILL.—Sylvanus L. Watting and William C. Watting, Prospect, O. (No model.) No. 450,855. Serial No. 376,541. Filed Jan. 2, 1891.

BALING PRESS.—Henry G. Klockmann, La Grange, Tex. (No model.) No. 450,942. Serial No. 368,697. Filed Oct. 20, 1890.

Issued on April 28, 1891.

HORSE POWER.—Arthur F. Clement, Hastings Center, N. Y. (No model.) No. 451,152. Serial No. 373,283. Filed Dec. 2, 1890.

APPARATUS FOR CONDITIONING OR DRYING GRAIN.—Charles Mallinson, Liverpool, England. (No model.) No. 451,306. Serial No. 369,211. Filed Oct. 24, 1890. Patented in England Oct. 2, 1888, No. 14,182, and July 11, 1890, No. 10,810; in France Feb. 18, 1889, No. 196,140, and in Austria-Hungary Sept. 11, 1889, No. 17,677 and No. 29,496.

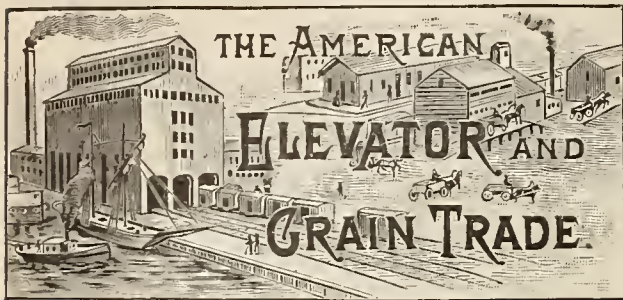
Issued on May 5, 1891.

GRAIN SCOURER.—Charles Rippin, St. Louis, Mo. (No model.) No. 451,580. Serial No. 382,698. Filed Feb. 25, 1891.

PNEUMATIC CARRIER.—Edwin D. Leaycraft, Jersey City, N. J. (No model.) No. 451,619. Serial No. 357,550. Filed July 2, 1890.

ATTACHMENT FOR FANNING MILLS.—John Herson, Port Huron, assignor to Sidney Cole, William H. Burgess, Frank McKenney and James H. McKenney, all of Crosswell, Mich. (No model.) No. 451,670. Serial No. 384,065. Filed March 7, 1891. Patented in Canada Sept. 4, 1886 No. 24,883; in Austria-Hungary March 31, 1887, No. 76,657, and in Belgium June 29, 1887, No. 14,827.

It is estimated by competent authority that last year's grain yield of Eastern Washington will be discounted in 1891. The snows have been bonntiful and timely. Gradually melting, the water was absorbed in the ground, and there remains, to be drawn up through root and stalk to nourish the immense fields of the inland empire. The broad, fruitful valleys of Yakima, Walla Walla, Palouse and the wide sweep of the Big Bend country, which last year charged the elevators and defied the powers of the railroads, will this year pour 40 per cent. more grain into the elevators, depots and box cars. In many sections double acreage is reported, and in nearly all others the increase has been from 25 to 30 per cent. Twenty millions of bushels of wheat will demand export from the greatest grain-growing region of all the world in 1891.—Seattle Press-Times.



— PUBLISHED ON THE FIFTEENTH OF EACH MONTH BY —

MITCHELL BROS. COMPANY.

(INCORPORATED.)

— OFFICE —

Howland Block, 184 and 186 Dearborn St.,

CHICAGO, ILL.

Subscription Price, - - - \$1.00 per Year

English and Foreign Subscriptions, - - 1.50 " "

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A. J. MITCHELL, - - - Business Manager.

HARLEY B. MITCHELL, - - - Editor.

ADVERTISING.

This paper has a large circulation among the elevator men and grain dealers of the country, and is the best medium in the United States for reaching this trade. Advertising rates made known upon application.

CORRESPONDENCE.

We solicit correspondence upon all topics of interest connected with the handling of grain or cognate subjects.

CHICAGO, ILL., MAY 15, 1891.

GIVE HIM A REST.

Some time ago this paper announced that as a factor in the speculative market B. P. Hutchinson would probably figure no more. His recent erratic performances have confirmed the truth of what we said; but whatever the old gentleman did or said offered no palliation for the dogging of his footsteps by the press, and the reporting in the papers of his slightest word or deed. "Old Hutch" has been a power in the speculative market. His fortune is dissipated, or the most of it, and the old gentleman wants to be let alone. Why can't he be allowed to have the rest which he says he wants? The great dailies are in small business to follow the old man so persistently. His career is closed, and he ought to be left alone.

GRAIN INSPECTION AT COUNTRY POINTS.

The tendency to establish state inspection of grain at every cross-road that has a corn crib or grain bin, we are sorry to say, is increasing, and the list of sinecure offices with fat salaries is also being increased out of all proportion to the necessities of the case.

The establishment of state inspection departments at small country markets is far more detrimental than beneficial. It is detrimental in that it is totally unreliable. Each department must be paid out of the moneys received for inspection, so it is directly to the interest of the inspector to encourage in every way possible shipments to the market where he is stationed. All line grade will be placed in the upper grade, and much that is not line grade will go into the upper grade. The shipper will be favored and the buyer will be the loser thereby. This will continue until a lot of grain is stored and heats, or the buyer learns of the poor grading in some other way and refuses to buy any more grain by grade at that point. But other buyers will take the place of those that withdraw, and in turn will learn by experience to shun the place.

Some of the grain inspected at these country points will afterward be shipped through one or

more large markets where the inspectors can afford to be independent, as all should be. We feel certain that the grade of at least 25 per cent. of such grain will be lowered, and rightly too. The more rigid an inspection is the more reliable it is, and that which lacks reliability is worse than worthless.

If the establishment of inspection at country markets keeps on we will have, by and by, a constant war between the inspectors at different points to secure business, and the one who will hold out the greatest inducements to the shipper will get the grain to inspect. The producer and the consumer pay for these numerous inspections. All save one are useless. One reliable inspection should suffice; one is all that is needed.

SHALL WE EVER IMPORT WHEAT?

The Indiana *Farmer* propounds this conundrum, and thinks that it is within the probabilities that inside of a few years we shall be compelled to draw wheat supplies from outside sources. We think its reasoning is correct enough. If Alliance picnics and politics continue to cut such a figure in the future as at present, it is altogether likely that the day of grain importations will not be delayed. The present scheming of the granger to get a living out of the government by some means or other, will not be productive of good crops or careful tillage.

EXPORTS OF BREADSTUFFS.

During the month of April we exported breadstuffs valued at \$12,373,827, against \$15,543,912 for April, 1890, and for the four months ending April 30 we exported breadstuffs valued at \$42,820,540, against \$57,519,939 for the same period of 1890. During the month we exported 5,003,398 bushels of wheat, 1,489,770 bushels of corn, 258,697 bushels of barley, 17,037 bushels of oats, and no rye, against 4,538,130 bushels of wheat, 13,801,013 bushels of corn, 129,958 bushels of barley, 1,536,212 bushels of oats, and 299,601 bushels of rye for April last year. During the ten months ending April 30 we exported 41,118,404 bushels of wheat, 25,168,393 bushels of corn, 657,400 bushels of barley, 879,770 bushels of oats and 322,912 bushels of rye, against 46,452,327 bushels of wheat, 83,019,670 bushels of corn, 1,339,672 bushels of barley, 8,021,478 bushels of oats, and 1,528,424 bushels of rye for the same period of 1890. Wheat and barley fell off considerably, and corn, oats and rye show a remarkable decrease.

AN IMPORTANT BILL.

The Illinois State Senate has passed Secret's bill providing for the periodical weighing of grain stored in warehouses. The full text of the bill is as follows:

Hereafter, when it shall be deemed necessary by the State Board of Railroad and Warehouse Commissioners, they shall cause the grain in any warehouse of class A situated within this state to be accurately weighed for the purpose of ascertaining the amount of each kind and grade of grain in store in such warehouses. The time of weighing grain in any of such warehouses in pursuance hereof shall be fixed by the Railroad and Warehouse Commission, due regard being had in fixing such time to the amount of grain in store and the convenience of the owner, lessee or manager of said warehouse. Such commission shall, at the time of fixing the date for weighing the grain in any warehouse in pursuance hereof, designate an inspector, with such assistants as may be required, to superintend such weighing. The inspector so designated and his assistants, if any, shall have the right of admission to such warehouse during business hours at the time fixed for such weighing and until the same is completed, and the owner, lessee or manager of any such warehouse shall furnish to such inspector all information necessary to enable him to ascertain fully the amount, kind and grade of all grain in store, and to fully accomplish the objects of this act. All weighing of grain provided for in this act shall take place in the presence and under the supervision of the inspector so designated, who shall, before such weighing is begun, test the scales used, and satisfy himself that the same are correct. Said inspector shall examine all grain so weighed, and keep a record of the weight and grade of each kind of grain contained in such warehouse, and he shall make a full detailed report thereof to the warehouse registrar for the purpose of comparison with the records of the office. Any proprietor, lessee or manager of any warehouse of

class A who shall, after receiving forty-eight hours' notice for that purpose, refuse to permit such inspector and his assistants to enter such warehouse and be present and supervise the weighing of grain as provided in this act, or who shall refuse or neglect to weigh all grain in store in such warehouse under the supervision of such inspector, as is in this act provided, shall forfeit and pay a penalty of \$200 and a further sum of \$100 for each subsequent day of such refusal or neglect, said penalty to be recovered in an action of debt in the name of the people of the state of Illinois in any court of competent jurisdiction, and the penalties collected under this act shall be paid into the treasury of the county where such suit is brought.

THAT CORNER IN CORN.

In the Appellate Court Judge Waterman reversed a judgment rendered in the Superior Court in favor of the commission firm of Foss, Strong & Co. for moneys advanced and services in trying to create a corner in corn early in 1888. William Foss, a member of the firm, was notified to attend a meeting at the Grand Pacific Hotel, at which were represented C. W. Hartley, Hall & Ross, S. B. Walton, R. F. Cummings, Moore & Bushnell, the Union Grain Company, O. Barnard, Curtis & Bowman, D. A. Fredericks, W. S. Rankin, J. Shonkwiler, and the Rice Elevator Company. A syndicate was formed to buy up cash corn and May options in corn in Chicago, and Foss agreed to furnish the necessary money, saying there would be no trouble to corner the market, as his firm had 150 customers in Iowa whom his firm could control.

"This was clearly a combination to enhance the price of corn," says the court. "It was not only to purchase corn, but to prevent the free selling of the same. They were to control the price of a staple commodity, one of the prime necessities of life, and to compel those in need of corn to pay not the price determined by entire freedom, but a price to which their combination might be able to force the market. This is purely against public policy, and under the common law a century and a half ago would have been a criminal offence. The law will not attempt to adjust differences which arise out of transactions which it condemns. It will leave the parties where their own conduct leaves them. It will not compel them to divide the plunder or share the loss of an unlawful enterprise, neither will it require them to remunerate those who, with full cognizance of the character of said undertaking, assist them with money or service."

The last report of the condition of the Illinois wheat crop contains the following: "The condition at this date, of no year since 1880, has been so promising for a large yield as at this time, when the average condition for the state is six points above the normal. This taken in conjunction with the fact that the large area seeded last fall, 1,834,379 acres, has not been materially reduced by injury of any kind, either by winter killing, floods or Hessian fly, is good ground for encouragement to the farmer of a splendid crop this season. The area claimed to be destroyed by any of the causes mentioned above is but 3 per cent. of the entire area, a proportion so small that it was not thought necessary to take it into account in giving the area which will probably be harvested. The condition in the northern division of the state is not quite so promising as in the central and southern divisions, being but 3 per cent. above an average, but that has been exceeded but once in the ten previous years. In the central and southern divisions of the state the present condition is 108, a point which has not been reached before at this date for over a decade. But few complaints of any kind as to the wheat have been received, but in Scott county it is claimed that the lower blades on some of the wheat on stubble ground are turning yellow, but it is not yet determined whether this is caused by insects or dry weather. Pope and Clinton counties report the same trouble. Fly is working to a limited extent on the grain in Monroe, Moultrie, Bond, Pike, Tazewell and Fulton counties. The oats louse is at work on wheat in Monroe and White counties. Bond and Livingston counties report some chinch bugs, but neither they, the oats louse nor the Hessian fly are doing much damage. The most serious dan-

gerso far is that the growth is so rank that lodging is imminent, and in the counties of White and Bond the wheat has already begun to lodge. In Mason county many farmers are pasturing their wheat, it is growing so rank. In Massaic county wheat is beginning to head.

The area devoted to spring wheat is 7 per cent. less than the area seeded to this crop in 1890, and the May 1 condition of the crop is 68 per cent. In the northern division of the state there is an increase in the area of spring wheat as noted, viz.: Bureau 111 per cent., Cook 112, Dupage 103, Kane 110, Lake 102. In Jo Daviess county the area reported as seeded is but half as large as last season. The May 1 condition is above the average in the counties of Bureau, 101, Dupage 102, Henry 105, and Winnebago 110. But five counties in Central Illinois report on spring wheat, the area seeded being 89 per cent. as compared with last season, and the May 1 condition being 90 per cent.

THE FUTURE OF WHEAT PRICES.

The Liverpool *Corn Trade News* quotes the views of a Russian economist, Mr. Ivan Maklechvsky, in the course of which he presents some remarkable figures. He begins with the year 1850, and taking the price of wheat in England as a basis, he tells us that in Germany wheat was from 1850 to 1859 16 per cent. lower than in England. It steadily rose in each subsequent decade, and the average price between 1880 and 1888 was 11 per cent. higher than in this country. In France wheat was sold between 1850 and 1859 at 5 per cent. below English prices, but in 1881 to 1884, inclusive, it ruled higher to the extent of 29 per cent. M. Maklechvsky thus brings an evident, though unexpressed, charge against the agrarian protectionism pursued in recent years by France and Germany. The conclusion to be drawn from his exhaustive investigation is, that it would be greatly to the interest of the people of Germany if they could be induced to open their markets freely to imports of Russian wheat. If this could be done, a great trade might be established, to the advantage of both countries. The present rise in prices ought to certainly strengthen this appeal. The German people are for the most part very poor, and cheap bread is to them as important as it was to the population of this country forty or more years ago. Why, then, should it not be a first consideration with the government of Germany to enable its subjects to obtain their daily bread at the smallest possible sacrifice, especially since in Russia it can be grown, almost close at hand, at a much lower cost than that at which on most German farms it is now, under a protectionist system, produced?

Commenting upon the above facts, the *Corn Trade News* says: "But if, as at present seems likely, the price of wheat is to rule much higher in the future than it has done in recent years, some other considerations arise. The production of this cereal in England, in the eastern counties especially, will increase to a substantial extent. There will also be a much larger import from India, unless a rise in Eastern exchange should prevent it. In any case, however, the probability is that wheat will be dearer than it has been in recent years."

THE PROSPECTS FOR WHEAT, ETC.

There seems to be every reason for anticipating a large crop of winter wheat. It is seldom that at this time of year the winter crop has looked better. In fact, if we except a few localities, the prospect is uniformly favorable. The report of the government statistician is as follows:

Winter wheat 97.9, rye 97.2, barley 96.2. This is an advance in wheat of one point during April, and of quite as much in rye. A gain in wheat is reported in New York, in some of the Southern states, in Michigan, and slight improvement in Illinois, Missouri and some other states. The uniformity of the condition is somewhat remarkable, no state average being lower than 93. The condition of mowing lands is also high, averaging 97, ranging from 90 to 100. The average for spring

pasture is 98, ranging from 92 to 100, except a drop in Utah to 98 and in New Mexico to 83. The progress of spring plowing has been greatly retarded by excess of moisture. In the central and southern belts the proportion planted is reported at 68.8 per cent. The average of several previous years has been 77 per cent. In the Ohio valley excess of moisture delayed plowing through March, and interfered with its progress in some places during the first two weeks of April. The work has progressed rapidly since, and germination has generally been prompt. In the Northwest the season has been favorable; spring work is well advanced and spring grain coming up and growing finely. An investigation has been made of the effects of frost on May 5 and 6. Telegrams have been received from state agents showing that very general damage has resulted to strawberries and early vegetables, some injury to grapes and cherries, and peaches to some extent. In the East and North it was too early to injure apples and pears; in the Ohio valley it is thought it may cause dropping of growing fruit. The fruit belt of Western Michigan is said to have received little injury, though the damage has been serious, especially to small fruit and vegetables, in other parts of Michigan. Nearly all unite in saying that no injury to the growing crop has occurred. The proportion of cotton planted on May 1 was 77.5 per cent., which is less than the average of a series of years. Many correspondents report planting one to two weeks late.

BUGS IN KANSAS.

Reports from Kansas have not been reassuring as to the immunity of Kansas wheat from the attacks of the Hessian fly. In fact, judging from the printed reports, about every third field in Kansas has suffered from the ravages of the fly, or some other mysterious insect that has seemed to have a special grudge against the Kansas farmers. Chancellor Snow says the present spring has been particularly unfavorable for the health of chinch bugs, but still in twenty counties in the southeastern part of the state included between meridians 95 degrees and 99 degrees and between the 38th parallel and the southern boundary of the state, the chinch bug is out in full force. In the other counties of the state the pest is not so numerous, still exists in fully one-half of all the counties. The bugs now in the wheat fields are a remnant of last fall's brood which hibernated. The females have been laying their eggs, and the young will soon be hatched. The eggs are very susceptible to the influence of climatic conditions, and if we should have heavy rains between now and May 26 the crop of young bugs will be much ensmallled. Continuing, the report says: "Active measures must be resorted to to keep the pests down. Much hope is placed in the outcome of the workings of the 'new remedy,' namely, the attempt to spread artificially a contagious disease among the bugs. The experiments of the early spring in the laboratory indicate the activity of the contagion, and if the co-operation of the farmers by sending in large numbers of live, healthy chinch bugs may be relied on, the station will be prepared to scatter infected bugs all over the state."

"Several reports showing the presence of the Hessian fly have been received, among others from Sumner, Labette, Butler, Geary, McPherson, Marion and Douglas counties, showing a general distribution. But I think no serious apprehension need be felt for the safety of the wheat crop because of the fly. The report from Russell county concerning the presence of a small green bug in the wheat fields, and the subsequent investigation by Secretary Mohler and myself, has been fully exploited in the newspapers. There is no new information about the bug or its alleged damage to the wheat to offer. I do not believe it will prove consequential in crop injury."

Some ill-natured persons are mean enough to suggest that careless tillage is at the bottom of the entire complaint. They point to it as a peculiar circumstance that the yellow fields belong invariably to members of the Alliance who are patrons of picnics and similar diversions of the

craft. Of course this is libelous. The Alliance men are all right. But it is just possible that the Almighty is visiting the sins of the order upon the individual members. They certainly deserve something.

THAT "WHEAT STEALING" CASE.

Decidedly, the sensation of the month has been the charge that the elevators at Duluth have engaged in a systematic robbery of shippers by shipping out as "screenings" good wheat, which had been given a grade or first inspection there. As might be supposed, the parties bringing the complaint are members of the alliance. Their specific charge is that over half a million bushels of wheat have thus been shipped out, which should properly be graded out. The farmers' case is thus stated by Gen. Barrett: "What the farmers want is to be able to send their wheat to the Duluth elevators, there to be stored until they choose to sell it. They want, when an individual ships a carload of wheat, that carload to be so stored that it preserves its individuality; in other words, that it be not mixed with other wheat in the elevator, and so lose its identity. They want, when the wheat is received at the elevator, to have it fairly weighed and justly graded, and then stored to their order. For this wheat so stored they want the state to issue to the owner of the wheat a receipt for the same in the same manner as the United States Government issues receipts to the whisky distillers for spirits held in bond. By this manner the farmer could deposit his receipt in a bank and raise money upon it, it being, in fact, a wheat certificate and negotiable paper. Then the farmer could sell his wheat at his own time and at his own price, just as the market suited him."

On the other hand says B. Porter, the assistant register of the Duluth inspection office, an account was kept one year by his office of the amount of screenings which had been found in wheat. In some cases it would be 1½ pounds and sometimes 1½ pounds to the bushel. "Out of 25,000,000 bushels of wheat," he added, "there would be about 500,000 bushels. Thus you see how easy it is to have either a large surplus or a large deficiency at the end of the year, even where the weighing has been honestly done. There have been comparatively few complaints made against the Duluth inspection office, not so many as one would expect, considering the amount of wheat handled."

It is hardly probable that the contention of the farmers is correct. To an unprejudiced person it would appear that the allegations of the alliance people are unfounded.

Who will be appointed chief grain inspector for Omaha? That is a question the grain dealers of that state should decide. The Grain Dealers' Association of that state has an excellent opportunity to do a good work for its members. No man who is incapable of filling the office should be appointed because he belongs to the party in power. It is of vital interest to the grain dealers of the state, and they should, at least, make a combined effort to secure the appointment of a fair-minded, practical business man who knows considerable about grain.

As noted in our last issue, the Attorney General of Illinois decided that the state was not responsible for the mistakes of its grain inspectors, but that the inspectors were responsible for their mistakes. Since then the Illinois Senate has passed a bill providing that the grain inspectors shall be held responsible for their mistakes. The enactment of a special law on this subject will fix the liability of state inspectors, and make them more careful. The law, however, will not affect grain inspectors at Peoria, East St. Louis and other points in the state where the inspection of grain is not controlled by the state. The eagerness of the inspectors at some points to secure business has led them to be entirely too lax in their grading. After judgments have been secured against them several times for losses caused by mis-grading, they will be more careful.

Grain Dealers' Associations.

KANSAS AND NEBRASKA GRAIN DEALERS ELEVATOR ASSOCIATION.

President, MASON GREGG, Lincoln, Neb.; *Vice-President*, FRANK LOWER, Council Grove, Kan.; *Secretary*, W. T. CAYWOOD, Clifton, Kan.; *Treasurer*, O. A. COOPER, Humboldt, Neb.

GRAIN SHIPPERS' ASSOCIATION OF NORTH-WEST IOWA.

President, T. M. C. LOGAN, River Sioux; *Vice-President*, H. HANSON, Odebolt; *Secretary and Treasurer*, F. D. BABCOCK, Ida Grove; *Assistant Secretary*, F. G. BUTLER, Sehall.

Executive Committee, E. A. ABBOTT, Des Moines; J. Y. CAMPFIELD, Sae City, and T. M. CATHCART, Kingsley.

GRAIN DEALERS' ASSOCIATION OF OHIO.

President, J. W. McCORD, Columbus, Ohio; *Vice-President*, L. BOGGS, Kingston; *Secretary*, E. C. WAGNER, Columbus; *Treasurer*, D. McALLISTER, Columbus.

Board of Managers, C. D. MILLER, Newark; DILL WEIGAND, South Bloomfield; E. M. BENNETT, JR., Urbana; C. W. PRINGLE, Lilly Chapel, and H. CHAMBERS, Worthington.

Legislative Committee, J. W. McCORD, D. McALLISTER, E. C. WAGNER, W. A. HARDESTY, and E. C. BEACHALL.

ILLINOIS GRAIN MERCHANTS' INSURANCE AND PROTECTIVE SOCIETY.

President, ISAAC VAN ORDSTRAND, Hawarden; *Secretary and General Manager*, S. K. MARSTON, Onarga; *Vice-President*, JOHN STEWART; *Treasurer*, G. C. McFADDEN, Havana.

Executive Committee, S. K. MARSTON, D. H. CURRY and F. M. PRATT.

Committee on Claims, D. M. BRUNER, J. F. ZAHN, H. C. MOWREY.

Committee on Legislation, W. ARMINGTON, V. R. ST. JOHN, C. C. ALDRICH.

A surprising quantity of corn has been shipped from Nebraska lately. The high prices have induced farmers to sell their stocks, which were much larger than were generally supposed. The southern division of the B. & M. R. R. in one day handled 100 ears.

Now that Hutchinson has taken a vacation, Ream and Pardridge have reappeared on the Chicago Board of Trade as heavy speculators on the short side. Hutchinson, with his contempt for money, many times upset the plans of Ream and Pardridge and compelled them to cover at a loss.

A lucky farmer, William Wrightman, near Middletown, Ind., was taking wheat from his barn recently to ship to market, when he found in the grain an old pocket-book containing \$11.50 in gold coin and paper currency. The wheat had been stored in the barn a year, and how the money got there is a mystery.

The seed distribution in Brown county, Minn., was ably done by the commissioners. They thank the following elevator firms for taking the warrants in payment for seed grain: St. Anthony and Dakota Elevator Company, Cargill Elevator, S. S. Cargill, Northwestern Elevator Company, Empire Elevator Company, Victoria Elevator Company, Whalen & Co. and George F. Bagley, all of Minneapolis; also J. W. Hoit and W. H. Wheeler of Aberdeen and Minneapolis, and the Aberdeen Mill Company of Aberdeen. They also thank the railroad companies and Frank H. Irons, secretary of the elevator companies, Minneapolis. The farmers purchased 40,743 bushels of seed grain, which has been sown upon 38,183 acres of land, owned by 618 persons.

The United States exported in January 4,621,213 pounds of clover seed, 1,592,776 pounds of cotton seed, 5,897 bushels of linseed and 840,495 pounds of timothy seed, against 4,352,937 pounds clover seed, 581,371 pounds cotton seed, 17 bushels linseed and 1,171,151 pounds of timothy seed in January last year. During the seven months ending Jan. 31, 15,298,875 pounds of clover seed valued at \$1,160,132, 4,801,726 pounds of cotton seed valued at \$39,909, 75,734 bushels of linseed valued at \$99,524, and 5,306,487 pounds of timothy seed valued at \$251,875, were exported, in comparison with 13,990,203 pounds of clover seed valued at \$956,511, 3,724,060 pounds of cotton seed valued at \$32,637, 14,662 bushels of linseed valued at \$19,769, and 5,360,395 pounds of timothy seed valued at \$252,153, for the same months of 1889-90.

EDITORIAL MENTION

WE are indebted to W. W. Haskell of Kansas City, Kan., state grain inspector, for courtesies.

WE will consider it a great favor if our readers will send us news of interest to the grain dealers and elevator men.

IF Buffalo's proposed grain transfer houses are honestly and fairly managed, they will burn up before a year has passed.

POOL BROS. of Forreston, Ill., write us: "We do not wish to do without the AMERICAN ELEVATOR AND GRAIN TRADE, so inclose the subscription price for another year."

FRANK KAUCHER of St. Joseph, Mo., sends us a peculiar "blue print," supposed to represent Mr. Kaucher himself in an attitude of hot weather patience, "peacefully waiting the buzz of your trade."

THE Illinois Warehouse and Railroad Commission will establish grades of New Corn before the next crop is harvested. The only difference which will exist in the requirements for the same grade of New and of Old Corn will be in the amount of moisture.

MR. J. H. GREGG now has charge of the Chicago branch of the Jeffrey Manufacturing Company of Columbus, O. The Chicago quarters are at 48 South Canal street. Mr. Gregg is a practical and thorough engineer, with many years of experience in this special line.

WEBSTER MANUFACTURING COMPANY of this city have issued their catalogue for 1891. It is a particularly creditable performance, and describes in detail the specialties of this prosperous firm. They will be pleased to send a copy to parties who apply for it.

THE New York Produce Exchange has adopted 5,000 bushels as the minimum contract, instead of 8,000 bushels, which has been the figure hitherto. The change was opposed by the foreign houses, but was finally carried by a large majority. The new rule goes into effect on June 1.

IF you have opinions bearing on matters of interest to the grain trade express them where they will have the most hearers, and do the most good. The only journal published in the interests of the grain trade—the AMERICAN ELEVATOR AND GRAIN TRADE, solicits communications on subjects of interest to the trade.

THE Buffalo elevator pool has elected officers and decided what percentage of its ill-gotten gains will be given to each member. The shipper, and indirectly the producer, will be called upon all during the season of navigation, to pay a tax for the maintenance of this gigantic monopoly. It is high time the grain trade was rid of this incubus.

THE Illinois Warehouse Commission has shown by its action on the petitions made at the recent hearing that it is disposed to give full and fair consideration to the petitions of members of the trade. The change desired in the barley rules and the name of Turkey Red Wheat has been made and grades of New Corn will be established in hope of remedying the evil complained of. The name of Turkish Red Winter Wheat has been changed to Hard Winter Wheat. In all other markets of importance the grades of this

variety are so named, and this change places Chicago grades in uniformity with those of other markets and simplifies grades of wheat.

WITH this issue we make an addition to our journal which we hope our readers will appreciate and make use of whenever they can. It is the publication of a list of "Valuable Books for Grain Dealers," which we are prepared to mail to any address upon receipt of price. Look it over and if we have any books you desire let us hear from you.

AN answer has been filed by the Rock Island and the Santa Fe Railroad Companies in reply to the complaint of the Kansas City grain men. The companies declare that Kansas City is not the grain market it is claimed to be. Their defense is not a good one, and we doubt not that persistence on the part of the grain dealers will win the desired point.

THE Duluth Board of Trade has decided to change its rules so as to make No. 1 Northern the contract grade, instead of No. 1 Hard, as at present. The change is made because No. 1 Northern is nearer the quality of the contract grade on the New York Produce Exchange and the Minneapolis Chamber of Commerce. The change will occur on the 1st day of September.

STATE inspection of grain has been established at Quincy, Ill., and the Governor has appointed Mr. D. F. Deaderick to the office of chief inspector. The state now has state inspection at three points besides Chicago—Joliet, Decatur and Quincy. The grades established by the Warehouse Commission for Chicago are in force at all these points, but the inspections are very different.

GRAIN dealers will find it to their interest to give as much encouragement as possible to the proposed line of telegraph to connect the different commercial exchanges of the country. It will connect with all the principal cities and intervening cities in which it will be convenient and profitable to establish an office. The line will be built and controlled by the exchanges and messages transmitted at a much lower rate than at present.

OUR exporters of breadstuffs have excellent prospects for a good year's business—abundant crops at home and poor ones in many foreign countries. In addition to this, import duties on grain have either been abolished or have been reduced. Venezuela and Brazil have abolished the duties, and Germany will probably do so. France, Spain, Portugal, Cuba and Porto Rico have reduced the duties, so will have freer admission to many markets.

STATE inspection of grain has been extended to St. Cloud, Minn., and a department similar to that at the three cities, Minneapolis, St. Paul and Duluth, will be established. The law enacted by the last legislature also provides that a state weighmaster shall be established at St. Cloud and have exclusive control of the weighing of grain. The men who are placed in office will be the largest winners by the establishment of these offices at St. Cloud.

KANSAS has inspectors of its own at Kansas City, Kan., now, and it also has a law forbidding the inspection of grain in Kansas by any but inspectors regularly appointed by Kansas officials. The chief deputy grain inspector on the Missouri side of the line has learned this to his sorrow. He inspected a car of grain recently which was on the Kansas side of the line and was arrested. This is hard on the inspector. If he does not inspect enough cars to pay expenses the force of inspectors will be reduced or the charge for inspection increased, and the work of inspection will be driven thereby to the Kansas inspectors. If the authorities of that neighborhood will take to arresting inspectors grading grain by telephone, a

great favor will be conferred upon all Western shippers. Let us have reliable inspection or none.

As will be seen from the card elsewhere, the style of the well-known firm of G. W. Crane & Co., of Minneapolis, has been changed to W. S. Bell & Co.

The article in this issue on "Supplies and Prices" by Mr. Abernathy, was written some weeks ago, but nevertheless contains many pertinent suggestions and facts.

Write to this paper. Send the news of your locality, and give your views on topics of interest. We want this paper to be in fact, as well as name, the organ of the interest it represents.

We send out many sample copies of this issue. Those who are not regular subscribers we ask to look the paper over carefully, and decide if it is not worth the insignificant price asked for a year's subscription.

It is thought the Illinois Board of Railroad and Warehouse Commissioners will appoint John M. Trumbull of Monmouth as Registrar of Warehouse Receipts in Chicago. Maj. Burst, the present incumbent, has given excellent satisfaction.

The Farmers' Alliance of Sedgwick county, Kan., proposes to start a bank, build an elevator and print a lot of political literature. It will probably build a flour mill next, legislate against the Hessian flies and issue a revised edition of the Scriptures.

We have received from the Berger Manufacturing Company of Canton, O., their new illustrated catalogue and price list for 1891. It describes Berger's Patent Steel Roofing, Berger's Seamless Eave Trough, and the other well-known specialties of this company.

We are compelled to omit much interesting matter, from the call upon our advertising columns this month. Most of it will keep, however, and next month we trust to present a paper which will surpass all its predecessors in the quality and quantity of its contents.

Among the new advertisements in this issue is that of Tromanhauser Bros. of Minneapolis, Minn., elevator builders. The firm consists of J. H., E. H. and S. H. Tromanhauser. The senior member of the firm has been a member of the Crane Company. The new firm has our best wishes.

It seems that there was a serious defect in the bill of Senator Shea of Nebraska for the regulation of warehouses. In the engrossing of the bill the amendment fixing the rate which warehousemen could charge for storing, was omitted. This virtually nullifies the law, as we understand it.

If you would like to get a paper oftener than once a month, subscribe to the *American Miller*, an eighty-page paper issued the first of each month. The subscription price is only \$1.00 per year. We furnish it and the *AMERICAN ELEVATOR AND GRAIN TRADE* at \$1.50 for both papers.

Lake freights were never so low. Think of steamers making a voyage of 2,000 miles for 2 cents a bushel on grain. A steamer in Chicago was chartered to go to Duluth and load with wheat for Buffalo at the price named, and charters have been made here as low as 1½ cents for corn and 1¾ cents for wheat.

Ocean steamship officials, who have been surveying the European markets, predict a large increase in the shipping of breadstuffs from the United States between now and the next harvest, and this means higher rates on grain and flour. However, the supply of good shipping room is so much in excess of that required to

transport what breadstuffs we can spare before the next crop is harvested, that the rates are not likely to be excessive.

The *Farm Implement News* of Chicago has issued a very neat 48-page pamphlet containing forty or more illustrations showing the different style of vehicles in use the world over. While designed by the *News* as an advertisement of its own excellent self, it is nevertheless quite an important contribution to special literature.

The Grand Trunk will, it is reported, divert the bulk of its grain shipments which have heretofore been sent by way of Georgian Bay ports, to Port Huron, and what grain cannot be handled by its elevators at Sarnia, Ont., will be handled by the elevators at Port Huron, Mich. The Port Huron elevator men have long been striving to secure the handling of all the grain exported into Canada at that port, and many well-posted persons agree that they should have it.

Mr. Robert Grimshaw, general editor of the Trades Department of Funk & Wagnalls' Standard Dictionary, being desirous of making as complete as possible his list of mechanical and industrial terms, requests manufacturers of machinery and tools having important parts not found on those of other makers, or the names of which are not yet in general use, to send the name, definition and use of each such part to him at 115 Bible House, New York City.

The Inter-State Commerce Commission has been investigating the complaints made by the Milwaukee Chamber of Commerce regarding the reshipping of grain at that point by the railroads, and the prospects are that a change will be made. If the grain shippers of this country never make formal complaint against the shortage evil this outrageous abuse will continue to exist. Peacefully submitting to this imposition will only encourage the railroad companies to perpetrate greater ones.

No grain buyer should try to do business without a series of grain tables for reducing pounds to bushels. One of the best works we have seen in this line is Clark's Standard Series of Grain Calculators, which is published in different forms. The calculator for country buyers contains nine tables, in which wagon loads up to 4,000 pounds are reduced to bushels. The shippers' calculator contains sixteen tables for reducing carloads of from 20,000 to 64,000 pounds to bushels. The "Vest Pocket Grain Tables" are more convenient than either of the other editions, and are more extensive. The size of the vest pocket tables is 2½ by 8½ inches. It includes eight tables, and any quantity of grain or seeds up to 100,000 pounds are reduced to bushels. These tables will more than pay for themselves every day in time saved to buyers.

The Portuguese Government removed all restrictions on the sale of wheat in open market and reduced the duty to the nominal figure of 10 reis per kilogram. The restriction imposed on the sale of wheat by the decree of Aug. 29, 1889, practically prohibited the importation of foreign wheat. In the first place, the decree of Aug. 29, 1889, established a schedule price, and provided that until the millers were unable to obtain supplies of native wheat at those prices they could not use imported wheat. The stores of the millers were converted into what may be termed bonded warehouses. If the prices of native wheat were advanced above the schedule of prices named, the millers could then import wheat, but they were required to show that they had twice as much native wheat in store at the time of importation as the amount they imported. For instance, if they imported 8,000 bushels, they must have 16,000 bushels native wheat in store. Further provision was made in case no native supplies at all could be obtained at certain specified prices, in which event the millers were to be allowed to import all the wheat they required. All these restrictions were guarded by an elabo-

rate system of certificates, but are all removed by the decree of April 15.

Judge Waterman recently decided a case at Chicago which will cause the commission men to be more careful hereafter when bringing suit to recover commissions and moneys advanced. Foss, Strong & Co. brought suit and were given judgment in the trial court for moneys advanced and services rendered in attempting to run a corner in corn, but the judge decided that "the law will not attempt to adjust differences which arise out of transactions which it condemns. It will leave the parties where their own conduct leaves them. It will not compel them to divide the plunder or share the loss of an unlawful enterprise, neither will it require them to remunerate those who with full cognizance of the character of such undertaking, assist them with money or service."

When silver goes up the profit in exchange between India, Russia and other countries with a silver standard, and those having a gold standard, is reduced, and trade between such countries can be more advantageously carried on than between such countries having the same standard. The depreciation in the price of silver gives India and Russia a greater advantage over us in the importing countries where our goods compete with theirs, but if the opinions of the leading financiers of the British capital are to be relied upon, the price will soon advance, and the advantage which these countries have over us will soon be reduced, and we will secure a better price for our products which compete with those from countries having a silver standard established long ago.

CAPACITY OF ELEVATORS.

The lifting capacity of an elevator is in proportion to the size of the cups and the speed at which the belt travels, and can be determined by multiplying the quantity contained in one cup by the number of cups that pass a given point in a given time. Thus if the cups hold one quart each and ninety-six of them pass a given point in a minute, we have ninety six quarts or three bushels elevated per minute, or one hundred and eighty bushels in an hour. If the cups hold one pint each, then ninety bushels per hour are hoisted. To get at the matter fairly, ascertain the circumference of the head pulley by multiplying its diameter by 3.1416, and then by the number of revolutions the pulley makes per minute. That will give the number of inches the belt travels per minute; then divide the product by the space in inches, measuring from the top of one cup to the top of the next one, the result being the number of cups carried up each minute. The quantity carried by each cup multiplied by the whole number of cups, gives the quantity per minute, and that multiplied by 60 gives the quantity per hour.

The easiest and cheapest way to increase the capacity of a stand of elevators is to increase the speed, provided it can be done. That is especially true of elevators for handling wheat or other grain, unless it might be oats. Few wheat elevators run so fast but what the speed can be materially increased without much affecting the working of the same. For soft material too great a speed would be detrimental in that it might affect the discharge and cause too much carrying back and re-elevating, resulting sooner or later in chokes.

DOWN ON OPTION DEALING.

C. A. Pillsbury sees in the collapse of "Old Hutch" another strong argument in favor of abolishing option dealing. Mr. Pillsbury, in discussing the matter yesterday, said:

I do not believe in this option trading. It has been the cause of the great depression among the agricultural classes for years. It is enough for any market to stand what sales are made against what actual grain there is. But when a whole crop can be sold every day by a man who does not own a bushel of grain it will surely knock the life out of any market. Boards of Trade were originally started for parties who actually owned wheat for future delivery, and for parties who actually wanted to buy for milling and export. All this is strictly legitimate, but the legitimate business done on Boards nowadays as compared with the illegitimate is as 1 to 100. If it is actually necessary to wipe out the 1 per cent. of legitimate trade to destroy the 99 per cent. of spurious, then let it go.

PRESS COMMENT.

AMERICAN ELEVATOR SYSTEM ABROAD.

American ideas are spreading. Russia has adopted the American grain elevator system, and now far-away India is about to follow suit. Even the civilized American elevator will be unable to make the Indian wheat anything but a nasty, dirty, worthless grain and a "curse to the millers who have to handle it," as British authorities have dubbed it recently.—*Milling World*.

A MARKET FOR CANADIAN BARLEY WANTED.

Would those wisacres who have undertaken to settle the problem of when and how we can best dispose of our barley, please fix a date when we can expect a final decision? Of course the matter is not pressing for a solution, but at the same time it would relieve our editorial mind if a satisfactory conclusion could be arrived at say before the next two or three harvests have been marketed. If our natural market is now across the Atlantic we must bestir ourselves to prevent the railway companies from taking more than half the price of our product for the freight to the seaboard. And more than this due arrangements must be made to prevent those discriminations between shippers which have so long proved a bar to business.—*Canadian Miller*.

A HOPEFUL OUTLOOK.

Already the members of the grain trade, but particularly those interested chiefly in wheat, are feeling decidedly hopeful over the outlook for the coming season, and it is the general opinion that all interested, brokers, receivers and exporters will enjoy a prosperous year. There are, indeed, good grounds to feel encouraged, and if nothing unforeseen happens these great expectations will doubtless be realized to some extent. Crops in Europe have certainly been damaged appreciably, although the extent of the injury has probably been exaggerated somewhat. Assuming, however, that the shortage is only half as great as alleged, we have even then good reason to anticipate a much better export demand for wheat and flour. Fortunately our crop prospects are excellent.—*Produce Exchange Reporter*.

NEBRASKA'S WAREHOUSE LAW.

Nebraska grain producers and grain dealers have long needed just such a measure for their protection, convenience and advantage as the warehouse bill passed by the legislature in the last days of its session. Omaha is by no means the only city that will handle the grain product of Nebraska. Local warehouses throughout the state will be able likewise to issue warehouse receipts, and having the indorsement of inspectors, they will be negotiable, and the producer can immediately realize whether he sells on the market the day of delivery or weeks afterward. The local dealers can ship their surpluses to the larger centers, like Omaha, and negotiate receipts with local bankers, thus increasing the working capital throughout the state during the shipping season, and saving the exchange and commissions which now enrich the Eastern buyers.—*Omaha Bee*.

FOREIGN VIEW OF THE WHEAT TRADE.

The causes which have communicated more strength to the wheat trade are: First, the comparative exhaustion of American supplies; secondly, the tendency of the Americans to engage to a larger extent in manufacturing industry; thirdly, the continuous growth of the population of the United States, which is advancing at the rate of 100,000 per month; and fourthly, the failure of the winter wheat crop in France, in consequence of the extreme severity of the past season. The progress of American consumption is also a somewhat important factor in the situation. A population which is growing at the rate of 100,000 per month must be continually absorbing more of the current wheat production of the United States. It is undoubtedly true that American merchants have shown themselves comparatively indifferent of late to European wheat quotations, as the local demand has been sufficient to sustain the markets of New York, Chicago and other great American commercial centers.—*Herapath's Commercial Journal, London*.

INVESTIGATION BY STAR CHAMBER METHODS.

In March last a committee of the house was appointed to investigate the charge from some unknown source that 60,000 bushels of wheat had been taken out of a public elevator at Duluth without inspection, and whether the same condition prevails in other elevators of the state. Previously to the appointment of this committee the superintendent of the elevator company complained of was waited upon by a couple of fellows who threatened him with the exposure of something terrible in this line unless they were silenced by a money consideration. The investigating committee then evidently owes its inception to this precious pair of blackmailers, and it is tainted all through with the infamy of ignoble origin. The conduct of the investigation has been in keeping with the motives which inspired it. All sessions have been held with closed doors. All proceedings have been ex-parte. The

accused party was not permitted, either in person or by counsel, to confront his accusers, to cross-examine witnesses, or to offer testimony in his defense. He was not even permitted to know the charges against him. A more high-handed outrage was never perpetrated under the most nefarious of despotic governments than this star chamber proceeding.—*Pioneer Press, St. Paul*.

A VARIETY OF CROPS.

Several years ago the farmers of Minnesota became convinced that their best chance for success lay in a variety of crops, and it is no longer an exclusively wheat state. The culture of flax has grown to be a popular one, and now hemp is being introduced with a fair promise of paying well for the care and expense needed to raise a crop. They have every condition needed to insure success.—*Chicago Tribune*.

THE EXCHANGES

The grain dealers of Omaha, Neb., are organizing a grain and produce exchange.

The Buffalo Merchants' Exchange will gain control of the old Board of Trade building.

The Omaha Grain and Produce Exchange has been incorporated by well-known grain dealers of that city.

By a recent amendment to the by-laws, new members of the Buffalo Merchants' Exchange may or may not join the gratuity fund, as they desire.

The lieutenant-governor of Manitoba has signed the bill passed by the Manitoba Legislature, entitled "An act to incorporate the Winnipeg Grain and Produce Exchange."

The Rochester (N. Y.) Chamber of Commerce chose a new secretary May 1. George Moss was elected to fill that position, taking the place of J. G. McClintock, who has been secretary since the Chamber was started four years ago.

The Board of Trade telegraph will, it is contemplated, connect Chicago, New York, Boston, Providence, Philadelphia, Albany, Buffalo, Toledo, Detroit, Milwaukee, St. Louis, Minneapolis, St. Paul, Duluth and such intervening cities as may be convenient and profitable to take in.

The grain committee of the Buffalo Merchant's Exchange has reported in favor of adopting the Richards' Hopper Scale system of transferring car grain. The trustees are not willing to indorse it without further information, so a committee of three was appointed to investigate.

The Omaha Board of Trade has instructed its president to appoint a committee to make arrangements for the establishment of elevators in conformity with the new warehouse law of Nebraska. President Martin has appointed a committee composed of L. D. Fowler, T. E. White, E. Rosewater, D. H. Wheeler and W. E. Nason.

The Winnipeg Grain and Produce Exchange is to have a building of its own. At a recent meeting the members signified their approval of the scheme, and a committee was appointed to take hold of the matter and obtain an idea of the probable cost, style and situation of the building. The committee will also report a means of raising the money.

The Duluth Board of Trade has issued its annual report. The report says that a significant feature of the year's business was the increased trading in No. 1 Northern wheat. Secretary Welles computes that the receipts of wheat for 1890 fell short of 1889 by 2,000,000 bushels. The increased receipts of barley and flaxseed during October, November and December made up in part for the loss in corn and oats. The property owned by the Board of Trade consists of a building and lot valued at \$120,000, on which is an indebtedness of \$40,000 in 6 per cent. bonds. A sinking fund of \$11,500 loaned at 8 per cent. has been provided to retire the bonds.

OATS IN OHIO.

The following is an abstract of a bulletin of the Ohio experiment station: The oats crop of Ohio for 1890 was one of the poorest on record. It was quite the poorest at the experiment station, owing to the attack of a peculiar disease, which caused the blades to turn yellow when the oat plants were about six inches high and stunted their growth throughout the season. Only four out of the fifty-four differently named sorts tested by the station in 1890 yielded so much as 33 bushels per acre. These were Improved American Dakota Gray, White Canadian and State of Dakota. These were followed closely by Monarch, Early Dakota, Black Tartarian and Wideawake. In a series of tests, extending over seven years, the Monarch, Early Dakota, White Schoenen, Rust Proof and Kansas Hybrid have given the largest yield. In general, five to eight pecks of seed oats have given a larger yield than a larger quantity, and drilling has been followed by better crops than broadcast seeding.

OBITUARY.

J. D. D. McCally, a grain buyer at Frederick, S. D., is dead.

Mr. Hanford of Lewis & Hanford, seedsmen at Louisville, Ky., is dead.

E. F. Gall of Fred P. Rush & Co., grain dealers at Indianapolis, Ind., is dead.

James Carey Coale, a member of the Baltimore Corn and Flour Exchange, is dead.

George C. Wynkoop of Blaker & Co., grain and lumber dealers at La Cygne, Kan., is dead.

D. P. Grier, president of the D. P. Grier Grain Company at St. Louis, Mo., died April 21.

W. J. Herren of W. J. Herren & Son, grain, hops and wool commission dealers at Salem, Ore., is dead.

Charles Rouse, one of the heaviest grain operators on the New York Produce Exchange, died Friday, May 1, aged 42 years.

Mathew Shoemaker, Jr., a young member of the Toledo Produce Exchange, is dead. He was highly esteemed by his many friends who sincerely mourn his loss.

Mr. Thomas Porter, formerly chief grain inspector at Burlington, Ia., died in Chicago April 29. All who had dealings with Mr. Porter had full confidence in his integrity.

W. R. Preston, formerly of the firm W. R. Preston & Co., grain dealers at New York, and a member of the Produce Exchange, died recently aged 72 years. His sons, William and George, continue the business. He left a wife, four boys and five girls.

J. M. Metcalf, a prominent grain merchant of St. Paul, Minn., accompanied by his wife, son and daughter, went South last fall for his health. He died at Jackson, Miss., recently and both his son and daughter died soon after. The widow, with the bodies of her loved ones, returned to St. Paul where the three corpses were interred.

W. F. Peirounet, an old member of the Chicago Board of Trade, died by his own hand April 22 in that city. He took a room at McCoy's Hotel after drinking heavily until 1 o'clock A. M. When a porter entered his room next day it was discovered that he was dead, and a small quantity of morphine found in the room revealed the method of his suicide. Mr. Peirounet was a prominent operator on 'change twenty-five years ago and was quite wealthy. He took to drink and neglected his business, losing almost his entire fortune. About two years ago he invested heavily in wheat, but had not enough money to margin his deal and lost heavily; next day wheat advanced 25 cents a bushel. He was disheartened by this failure. The coroner's jury returned a verdict of suicide while despondent.

EXPERIMENTS WITH OATS IN ILLINOIS.

A bulletin of the University of Illinois agricultural experiment station gives valuable information touching field tests with oats. It is the aim to report and interpret facts obtained. No prophecy is made with regard to the future. There are no means of determining absolutely that these results will be obtained again. The largest yield of grain was produced from sowing two and one-half bushels of seed in 1883 and 1890, and from three and one-half in 1889. The average yield was slightly larger when three and one-half bushels of seed were sown per acre.

In 1890 the so-called dun colored rust-proof varieties, Texas rust-proof, Texas red, and new red rust-proof, yielded the best. In 1889 they were among the poorest. Giant yellow French, which gave the largest yield in 1889, yielded indifferently in 1890. Early Dakota white is the only variety which did well both seasons. The earlier ripening varieties yielded the most grain and the least straw, and contained the least per cent. of kernel. In 1890 the dun colored varieties stood first in yield of grain, the black second, and the white third. In 1889 the white varieties stood first and the dun colored last. The yield was not materially assorted as to length, plumpness or by the weight of the berry. Those varieties with long slender light berries, and light weight per bushel, contained appreciably the larger per cent. of kernel. In other words those varieties which would have sold best on the market or, what is less important, would have taken the premium at the fairs, did not yield better than the other varieties, and did not have so high a food value.

A wheat palace has been suggested by Winnipeg citizens as an attraction for the proposed city industrial exhibition.

Just at present the wheat-growing sections of California are overrun with general agents and specials seeking to underbid one another in securing a risk on growing grain. Grain is grain, just now, particularly wheat, and if insured on its present value, or even at rates approximating it, and the market tumbles between now and July, it is safe to say the careless cigarette fiend and the pipe smoker will make sad havoc with the insured grain fields.—*Commercial News*.

Fires, Casualties, Etc.

The linseed oil mill at Winnipeg, Man., was slightly damaged by fire recently.

James Clear's brewery at Dixon, Ill., burned April 18. Loss \$11,000; insurance \$3,500.

Gelletand's elevator at Van Wert, O., was burned May 9, with a small quantity of grain.

Eberle's brewery at Jackson, Mich., was burned May 9. Loss \$20,300; insurance \$12,000.

W. R. Vanderveer, grain and coal dealer at McCool Junction, Neb., recently suffered loss by fire.

The Empire State Brewery Company at New York City, suffered a loss of \$2,500 by fire April 17.

John Kaufmann's brewery at Cincinnati, O., was damaged to the extent of \$18,000 March 25. Insured.

Faughner's flax mills at Alma, Mich., were burned on the night of May 9. Loss \$8,000; insurance \$2,500.

The Todd Elevator and Flour Mill at Dallas, Tex., was burned April 15. Loss \$65,000; insurance \$36,250.

A warehouse at Glidden, Ia., owned by Mr. Potter, and occupied by Crittenden & Morehouse, was burned April 9. Loss \$4,000.

J. W. Lambert & Co., dealers in grain and agricultural implements at Enterprise, O., were burned out recently. Loss \$7,000; insurance \$6,500.

The cotton seed oil mill of the Home Co-operative Cotton-seed Oil Company at Natchitoches, La., has been destroyed by fire. Loss \$28,000; insurance \$15,000.

The elevator at Minneapolis which was partly destroyed by fire a month ago, was again visited by fire April 29, with a loss of not more than a few hundred dollars.

The North Dakota Elevator Company's 35,000-bushel house at Glenwood, Minn., was burned on the afternoon of April 9, together with 8,000 bushels of wheat. Loss \$17,000; fully insured.

The hay and feed sheds and feed mills of Clark & Sampson at Long Island City, N. Y., were burned on the night of May 6. Many other establishments were burned out by the fire, which covered several acres of ground.

The works of the Northwestern Lead and Linseed Oil Company at Chicago were damaged by fire early in the morning of May 2. The fire was confined to the third floor where the machinery for making linseed oil was placed. Loss \$5,000.

Two grain warehouses at Salem, S. D., were consumed by fire early in the morning of May 10. One was owned by Thompson Bros., and the other by J. B. Powers & Co. About 3,700 bushels of grain were burned. The origin of the fire is unknown.

A general fire at Lyle, Minn., May 2, destroyed a grain warehouse and two elevators. The Inter-State Grain Company lost \$600 on the warehouse and \$3,000 on grain in stock. Hunting & Co. lost \$2,000 on one elevator, insured for \$1,500, and \$3,500 on an elevator and warehouse, insured for \$1,000. In this building was \$8,000 worth of grain, insured for \$2,000. Total loss \$17,100; insurance \$4,500.

Nortwood's grain elevator at Chatham, Ont., was burned May 2. The fire broke out at 9 o'clock in the morning and spread with great rapidity. In four hours the structure was reduced to ashes. The elevator contained 3,500 bushels of wheat owned by Richardson & Son of Kingston, a quantity of oats and two barley mills. The insurance on the grain is unknown. The building, valued at \$15,000, was insured for \$6,000.

Two elevators at Pendleton, Ind., burned April 26. The fire originated in the elevator and warehouse of D. W. Storer & Son, and swept across the railroad track to B. F. Aiman's elevator. Four thousand bushels of wheat, 5,000 bushels of corn, a large quantity of other grain and many agricultural implements were destroyed. D. W. Storer & Son lost \$10,000, insurance \$8,000; B. F. Aiman lost \$12,000, insurance \$7,850. The origin of the fire is unknown.

Two grain elevators at Harrodsburg, Ky., owned by the Mercer Grain and Coal Company, were completely destroyed by a fire which made its appearance in the top of the building at 7 o'clock P. M., April 16. The large four-story building went first, and then the smaller one adjoining. About 25,000 or 30,000 bushels of wheat, of which 10,000 bushels had been elevated a few days before, was burned. The cause of the fire is not known. Loss on buildings \$20,000; insurance \$13,000.

The Alton Elevator at Kansas City, Mo., was burned on the night of April 27. The fire started on the third floor from some unknown cause, and spread until the whole structure was ablaze. About 5,000 bushels of wheat, 4,000 bushels of corn and 9,000 bushels of oats were destroyed, besides ten cars standing on switch track on both sides of the elevator; one car contained 500 bush-

els of wheat and four 2,250 bushels of corn. The elevator was built eleven years ago, and was owned by A. W. Armour, president; E. D. Fisher, secretary, and C. H. Hammett, director, of the company. The loss is as follows: Elevator \$45,000; wheat \$5,500; corn \$4,000; oats \$4,000, and cars \$8,000; partially insured.

The grain elevator of H. S. Gilbert at Utica, near Ottawa, Ill., was destroyed by a fire which started in the top floor at 8 o'clock in the evening of April 17. The top of the building and the empty bins burned rapidly, but when the flames reached the grain the combustion went on more slowly. In an hour the building had been destroyed and the house was a mass of ruins which smoldered all next day. The elevator was the largest in town and was built on the canal ten years ago at a cost of \$11,000. Several thousand bushels of grain had been shipped out during the three weeks just past, or the loss might have been greater than it was. The house contained 21,000 bushels of oats and 7,000 bushels of corn. Loss \$28,000; insurance on building \$8,000; on grain \$23,500.

WATERWAYS

The first vessel to arrive at Buffalo from Chicago was the propeller Harlem on April 24.

The Cornwall Canal was opened May 4, permitting ocean steamers to load at Montreal.

Navigation opened at Duluth April 30, with the arrival of the steamers Livingston and Emily P. Weed.

The Commercial Congress at Kansas City, Mo., discussed waterways, and especially the Hennepin Canal.

The proposed canal from Puget Sound to Lakes Union and Washington, in Washington, may be constructed by a private company.

The Minnesota Legislature has passed a joint resolution asking Congress to appropriate money for a ship canal around Niagara Falls.

The steamer Brazil, carrying 94,000 bushels of wheat from Chicago to Buffalo, was pronounced 160 bushels short upon its arrival.

The Minnesota Legislature has protested in joint resolution against Congress guaranteeing the bonds of the Nicaragua Canal Company.

All the canals of New York state were opened May 5 by order of the superintendent of public works. All the waterways are in fine condition.

Of the 4,000 miles of water navigation between the important points of Lake Michigan and Liverpool only 71 miles are restricted by natural obstacles in the channels.

The steamer Joseph L. Colby and barges left West Superior, Wis., May 4, with 312,800 bushels of wheat, the largest quantity of grain ever carried on the lakes in one tow.

The propeller Milwaukee from Chicago, went on the Lime Kiln Rocks in the Detroit River April 24, and sunk with a cargo of 20,000 bushels wheat and 20,000 bushels corn; all insured.

It is said that a line of English steamers is to run between Chicago and English ports. The capital stock of the company will be \$5,000,000 and ten steamships will be built, costing \$125,000 to \$150,000 each.

A floating elevator has been placed in operation at Buffalo, N. Y., by C. J. Maim. This is Lyman Smith's Cyclone Elevator. It is cutting rates for transferring grain, and there is some chance that the combination may be broken.

The lowest rate on record was made when the steamer Tioga was chartered May 8 by Boyden & Co., to carry 50,000 bushels of corn from Chicago to New York via the Erie Canal at 4½ cents, including all way charges. At the same time the all-rail rate was 15 cents.

Fifty vessels laden with grain left Chicago April 20, at the opening of navigation. Thirty-three took 2,225,000 bushels of wheat; ten took 520,000 bushels corn; five took 460,000 bushels oats, and two took 105,000 bushels flaxseed, a total of 3,310,000 bushels grain.

Lieut. Wyse, who has been negotiating with the Colombian Government for an extension of the Panama Canal concession, advocates that six locks with an artificial lake in the middle be constructed. The cost is estimated at 600,000,000 francs, and the time, five years.

The Nicaragua Canal is making favorable progress in spite of the numerous obstacles encountered. The entire length of the canal is 170 miles, of which not more than 30 will have to be excavated, the Lake of Nicaragua and several rivers being used for the remainder of the distance.

The collector at the Welland Canal on May 6 refused to let the cargo of the steamer Baltic, bound for Montreal, after being transhipped at Ogdensburg into St. Lawrence River barges, pass without the payment of canal tolls. The toll was paid and a receipt taken. The rebate of one-half cent per bushel will be demanded and if refused,

the Vermont Central will carry the case before the United States Government on the ground that Americans have been discriminated against. If the rebate be not given the Ogdensburg route will be forced out of business and Kings-on on the Canadian side will be benefited.

The war department has approved the plans for making the Mississippi River navigable up to Minneapolis. It is not certain when the work will get under way, as much depends on a favorable stage of water. Dams will be built at the islands so as to throw the water into one channel.

Marine insurance on cargoes from Milwaukee has been placed by the underwriters at: To Lake Michigan ports, 25 cents; to Lake Superior ports, 40 cents; to Lake Erie, Georgian Bay, Huron, Sarnia and Detroit River, 20 cents; to Lake Ontario and Ogdensburg, 30 cents, and to Montreal, 50 cents.

The Illinois Legislature has adopted a joint resolution giving the United States title to all lands necessary for the construction and maintenance of the Illinois and Mississippi Canal (the Hennepin). This action was necessary in order that work could be commenced by the general government.

The shipments of bulk grain from St. Louis to New Orleans by barges in 1890 were 8,717,849 bushels corn, 1,409,440 bushels wheat, and 89,960 bushels oats; total, 287,630 tons. The total shipments by boat from St. Louis of all commodities during 1890 were 569,580 tons, against 645,455 tons the previous year.

The new canal being constructed between Lakes Huron and Superior will allow the passage of vessels drawing 19 feet of water. The one lock will be 800 feet long, 100 feet wide, and will contain when full nearly 23,000,000 gallons of water. Its capacity will be twice that of the present canal. The cost of the improvement is estimated at about \$5,000,000.

An arrangement has been made by which goods for Kansas City shipped into East St. Louis by rail, will be transferred to the Kansas City and Missouri River Transportation Company's dock free of charge. The former charge of 2½ cents a hundredweight on earloads, and 10 cents per hundred on less than earload lots, will be absorbed in the packet company's rate.

A. L. Mason, president and general manager of the Kansas City and Missouri River Transportation Company, says that the apparent lack of appreciation on the part of Kansas City shippers in not giving every pound of freight possible to the boat line, will force the management to withdraw the boats from the river, as patronage is the chief essential to the success of any undertaking.

The steam haulage of canal boats has been experimented on in Germany. Herr Wiebe at a meeting of the Railway Union at Berlin recently described some experiments made on two lengths of the Oder and Spree Canal three and one half miles long in all, with a view to ascertaining the best method of towing large boats. The submerged chain system was found to be unsatisfactory, nor did the endless rope system give good results when practically tested. The most satisfactory results were obtained with a locomotive drawing a heavy towing car. Boats have been towed by it at a speed of from 10 to 12 ft. per second.

Two whale-back barges were launched at West Superior, Wis., April 28, in the presence of 10,000 people. The dimensions of the barges are: Length, 265 feet; beam, 36 feet; depth of hold, 22 feet. Carrying capacity, 85,000 bushels wheat. Capt. Alexander McDougall, the designer and builder of whale-back barges, says: "Whale-back barges are the coming boats for the class of trade they will enter the race for. Their strength, durability, lightness of draft and speed are points of superiority that count. As an evidence of their coming into general use I will point to the fact that while many have been built in the past, a greater number are already projected or under way. I have the keels laid for several now at Duluth, and have plans and specifications drawn for ten in all."

The hop crop of New York state for 1890 was 95,000 bales. The acreage devoted to hop growing was 30,000.

A Chicago bucket shop failed recently, and its proprietor, F. J. Miner, left town with \$40,000 belonging to his patrons.

The soap of the future is to be made of cotton-seed oil, it is said. A company with \$15,000,000 capital has been formed to manufacture cotton-seed oil soap in the principal cities of the South.

The Hudson Bay Railway Company has been granted a bonus of \$1,500,000 by the Manitoba Government, and will proceed to build a railway from Winnipeg to Hudson Bay. Wheat is expected to be the principal thing transported.

Circumstances and conditions alter cases in almost all of our affairs, and so it is with grain inspection. The country dealer knows, or thinks he knows, exactly what is the condition of the grain he ships at the time of shipment, but he does not know exactly the condition in which it will reach the official inspection.

The Canadian Pacific Railway is after the grain traffic of the Northwest, having adopted a tariff from St. Paul and Minneapolis to Montreal, all rail, on the basis of lake and rail rates. The Grand Trunk has retaliated by taking grain to Sarnia by lake and thence by rail to Montreal at 2½ cents below the Canadian Pacific's rate.

ELEVATOR AND GRAIN NEWS

Kyle, Tex., is to have a cotton-seed oil mill.

A brewery will be built at Seven Devils, Idaho.

Hallettsville, Tex., is to have a cotton seed oil mill.

Many new elevators are being planned in Manitoba.

R. O. Porak of Sprague, Ore., is building a brewery.

Henry Uhler will build a brewery at Wrangel, Alaska.

Joseph Dickman is building a brewery at Ferdinand, Ind.

Listmann & Co. are building a brewery at Oregon City, Ore.

Dorman & Woltman are building a brewery at Golden, Colo.

Johnson City, Tenn., is to have a brewery in the near future.

August Weber of Naugatuck, Conn., is building a brewery.

J. C. Cloughston is building a grain elevator at Waynesboro, Pa.

A. T. Harlow will build a 150,000-bushel elevator at St. Louis, Mo.

Joseph Straubmuller of Philadelphia, Pa., is building a brewery.

A brewery is to be built at Omaha, Neb., by Poggensee & Saggan.

E. F. Egart & Co. will build a distillery at Cedar Grove, Ky.

N. Bawlf of Winnipeg, Man., will build an elevator at Rapid City.

A new grain elevator is to be built at Dana, Ill., by Chris. Sauer.

Walter Clifford will build a 30,000-bushel elevator at Austin, Man.

A stock company will build a cotton seed oil mill at Carrolton, Ga.

Any news of interest to the grain trade will be thankfully received.

V. S. Wright & Co., grain dealers at Denver, Colo., have sold out.

The Peter Haud Brewing Company will build a brewery at Chicago.

The Citizens' Brewing Company has been incorporated at Chicago, Ill.

The Bavarian Brewing Company will build a brewery at Chicago, Ill.

The Bohemian Brewing Company will build a brewery at Chicago, Ill.

James H. Clark, dealer in grain and flour at Orange, Mass., has sold out.

A 90,000-bushel elevator will be built at Neepawa, Man., for the farmers.

Norton, Way & Co., grain dealers at Ogden, Utah, have dissolved partnership.

The Brilliant City Brewing Company of Findlay, O., is building a brewery.

A. P. Brantley & Co. are putting up a cotton-seed oil mill at Blackshear, Ga.

C. H. Viall will build a distillery at King Spring, near South Pittsburg, Tenn.

A 20,000-bushel elevator will be built at Indian Head, Man., by Lord Brassey.

Record & Miles, grain dealers at Aurora, Ia., have been succeeded by Mr. Miles.

The Koppitz-Melchers Brewing Company is erecting a brewery at Detroit, Mich.

Roberts & Roberts, grain dealers at Bronson, Mich., have dissolved partnership.

The Chattanooga Brewing Company of Chattanooga, Tenn., will enlarge its plant.

The Exposition Brewing Company is putting up a brewery at Springwells, Mich.

A 35,000-bushel elevator is being built at Holly, Mich., by the Holly Milling Company.

A brewery is being built at Mechanicsville, N. Y., by the Werner Brewing Company.

Ames, Jackson & Co., dealers in grain and live stock at Sioux Center, Ia., have sold out.

E. Snyder, a grain buyer of Burdette, Ia., has been sued for \$15,000 by L. Latham, a prominent merchant, for making an insinuation that Latham had killed and eaten

one of Snyder's chickens. The town is considerably stirred up over the matter.

F. M. Smith, grain dealer at Shaller, Ia., has been succeeded by Jackson & Armstrong.

The Industrial Manufacturing Company will build a broom factory at Charleston, S. C.

J. M. Shaw & Co., grain commission merchants of New York and Chicago, failed April 17.

J. B. Caplice & Co., grain and hay dealers at Spokane, Wash., have dissolved partnership.

A stock company is being organized at Lowndesville, S. C., to build a cotton-seed oil mill.

The Grovania Oil and Fertilizer Company of Grovania, Ga., will build a cotton-seed oil mill.

James Rowe of Wilton, Ia., has purchased the elevator which he has been leasing, for \$3,000.

Philip Hahn, dealer in seeds and agricultural implements at Evansville, Ind., has sold out.

J. R. Fallis & Co., grain commission dealers at Minneapolis, Minn., have dissolved partnership.

L. K. Cary & Co. and Hibbard & Marshall are building a starch factory near Mount Fairfield, Me.

The Fidalgo Brewing Company has been incorporated at Anacortes, Wash., with \$50,000 capital.

Steps are being taken to secure capital for the erection of a 1,000,000-bushel elevator at Wichita, Kan.

The Gulf City Oil Mills at Mobile, Ala., which burned in October, will be rebuilt at a cost of \$75,000.

Frost & Fnlbrook, dealers in grain and live stock at Merrill, Ia., have sold out their grain business.

The St. Louis Breweries Company of St. Louis, Mo., is building a complete brewery and malt house.

Loran, Clark & Co., grain and lumber dealers at Albion, Neb., have sold out their lumber business.

Pratt & Co., who ran a bucket shop at Buffalo, N. Y., with branch houses, have gone under completely.

The Farmers' Alliance has built a 15,000-bushel elevator at Putnam, Kan., on the Santa Fe Railway.

The work of erecting the Ogilvie Milling Company's elevator at Carberry, Man., has been commenced.

An elevator and brew house will be built at St. Louis, Mo., by the Anheuser-Busch Brewing Association.

W. Eckles, who stole wheat at Grand Forks, N. D., has been sentenced to the penitentiary for one year.

The Houston Mill and Elevator Company has been incorporated at Houston, Tex. Capital stock, \$25,000.

R. W. J. Reed, a grain dealer and elevator man at Ulysses, Neb., has failed and left for parts unknown.

Church & Campfield, grain and coal dealers at Bridge-water, Ia., have been succeeded by Church & Madison.

D. A. McPherson, grain and produce dealer at Montreal, Que., has been succeeded by D. A. McPherson & Co.

The Broomhall Milling and Malting Company has been incorporated at Mohawk, N. Y., with \$15,000 capital.

A line of country elevators in Minnesota and Dakota will be built by the Imperial Mill Company of Duluth, Minn.

The John F. Wiessner & Sons' Brewing Company has been incorporated at Baltimore, Md., with \$100,000 capital.

Norcross & Work, dealers in grain, stock and agricultural implements at Sterling, Neb., have dissolved partnership.

W. Brennan, who stole five bags of oats from W. Murray of Pembroke, Ont., has been sentenced to five months in jail.

The Farmers' Elevator at Portage la Prairie will be enlarged to 115,000 bushels' capacity by a 50,000-bushel addition.

The Minnesota Legislature has passed the bill extending state grain inspection to St. Cloud and making it a terminal point.

McMillen & McLean, grain dealers and proprietors of a general store at Glenora, Ont., have sold their general store stock at auction.

If anything of interest to the grain trade occurs in your district, send us an account of it for publication. We want all the trade news.

R. G. White & Co., proprietors of a grain elevator and general store at Waverly, Kan., have been succeeded by Dewey, White & Co.

Leslie & Birss, dealers in grain, live stock and coal at Belvidere, Neb., have dissolved partnership in the grain and live stock business.

The farmers in the vicinity of Rapid City, Man., propose to build a 60,000-bushel elevator, and have opened stock subscription books.

F. M. Shaw, foreman of the Inter-State Grain Company's elevator at Minneapolis, Minn., has obtained a patent on a grain cleaner.

The Columbia Elevator Company has been consolidated with Buck's Milling Company of Columbia, Tenn., with a capital of \$100,000.

Leopold Bloom, a prominent member of the Chicago Board of Trade, has closed out all his deals and will permanently retire from business.

A new oil mill will be built to take the place of the Natchitoches Co-operative Cotton Seed Oil Co.'s mill at Natchitoches, La., which burned recently.

The erection of a malt house at Omaha, Neb., consuming 500,000 bushels of barley per annum is under consideration by Ex-Mayor Broatch of Omaha.

F. L. Benepe, dealer in grain and agricultural implements at Bozeman, Mont., has been succeeded by the Bozeman Implement, Carriage and Harness Company.

The Sharp-Lewis Commission Company of St. Louis, Mo., have contracted with James Stewart & Co. for a 150,000-bushel elevator, with all the latest improvements.

Fiske, Bennett & Co. have incorporated at Chicago, Ill., to operate a grain elevator. Incorporators, John M. Fiske, Martin H. Beunett and Joseph J. Parker; capital stock \$50,000.

A 150,000-bushel elevator is being built at East St. Louis, Ill., for the Kehlor Mill Company. James Stewart & Co. of St. Louis, the builders, expect to have it finished before harvest.

Murtey Bros. of Alvo, Neb., are building an elevator, and have placed their order with the Great Western Manufacturing Company of Leavenworth, Kan., for the necessary machinery.

The elevator of the Pittsburg & Western Railway at Richmond, near Fairport, O., is doing a good business. In one day recently 130,000 bushels of grain were transferred from steamers.

The large grain elevator being built at Canton, Baltimore, Md., by the Northern Central Railway Company, is nearly completed. The Baltimore Elevator Company will have charge of it when completed.

Grain elevators of 15,000 to 20,000 bushels' capacity will be built at Essig, Cobden and Kampeska, Minn., for the Eagle Roller Mill Company of New Ulm. Barnett & Record of Minneapolis, have secured the contract.

Coyle & Diehl of Chambersburg, Pa., propose to raise their grain elevator this summer to afford more convenience in loading and unloading grain from cars. Their old warehouse will be moved to the railway track and also raised.

A linseed oil mill will be built at Fort Dodge, Ia., with a capacity for crushing 400 bushels of flax a day. A company has been formed with R. W. Crawford, a prominent flax buyer, at the head, and a plant will be put in at a cost of \$25,000.

The Lee Elevator Company has been incorporated at Perley, Minn. Officers: President, Ben Nilson; vice-president, G. K. Riste; secretary, G. S. Alrick; treasurer, A. J. Krasins, and general manager, M. A. Bowhall. Capital stock, \$10,000.

A report from Eastern Dawes county says that the elevator at Hay Springs, Neb., is doing a rushing business lending out seed wheat to farmers. The terms of the loan are that the farmer shall pay back in the fall four bushels of wheat for one bushel of seed.

The Western Elevating Company of Buffalo, N. Y., which controls all grain arriving by lake, held its annual election April 9, with the following result: Geo. F. Sawyerby, president; Spenceer Clinton, vice-president; P. G. Cook, Jr., secretary and treasurer.

Walton Bros. of Philadelphia, Pa., have commenced operations on a grain warehouse with a capacity of 75,000 bushels grain, and storage capacity for 300 tons of baled hay. This building, when finished, will be one of the best warehouses of its kind in Philadelphia.

Thomas Dixon, Richard Sears and Adelard Tache stole twenty bags of oats from a car consigned to W. Murray & Co. of Pembroke, Ont., in January. Sears and Dixon were convicted and sentenced to five months and one month respectively in jail. Tache escaped.

The F. M. B. A. Elevator Company has been incorporated at Jerseyville, Ill., with \$10,000 capital stock, for building and operating elevators, milling, and dealing in farm products and machinery. Incorporators, N. C. Beaty, W. D. Landon, J. T. Grimes and W. H. H. West.

The wheat elevator to be built at Anacortes, Wash., by Senator C. G. Austin of Pomeroy, will be located on the water front, and have connection with the S. & N. R. R. by a side track. Work has been begun, and the building will be completed in time to handle this season's grain crop.

The Milmiue Elevator Company, composed of farmers, has been incorporated at Milmiue, Ill., to buy and ship grain. Incorporators, O. B. Baker, A. H. Ater, M. Stricky, and others; capital stock, \$1,200. It is the intention of the farmers to shut out the middleman and deal directly with extensive buyers.

James Mowbray, a farmer near Wichita, Kan., went to his corn crib April 18 and discovered a man helping himself to his corn. On looking closer he saw that the man was dead, having been caught between two split logs and

crushed to death. The crib was composed of logs laid one on the other. The thief had taken a post and pried the rails apart, inserted his head and arms, and was helping himself to the corn when the support gave way letting the weight of the wall of rails down on him with the above result.

The Western Grain Transportation Line has been incorporated at Chicago, Ill., to manufacture, acquire, operate and sell carts, implements and appliances for the transportation of all kinds of freight and merchandise. Incorporators, Frank L. Joy, Arthur S. Kirk and Charles S. Holt; capital stock \$50,000.

Charles S. Dole, a member of the grain elevator firm of Armour, Dole & Co. of Chicago, has begun suit for ejectment against David Clow to oust him from possession of a strip of land along Crystal Lake, which Mr. Dole claims under a government title. Judge Killum of McHenry county, has the case under advisement.

A. B. Taylor & Bro. have purchased the site of D. W. Storer & Son's elevator at Peudleton, Ind., which burned recently, and will commence at once to erect a large warehouse and elevator in time to handle this year's grain. B. F. Aiman, whose warehouse was destroyed by the same fire, will commence rebuilding at once.

The new grain elevator to be built at Omaha, Neb., by the Fowler Elevator Company, will have a storage capacity of 1,000,000 bushels when completed, and a handling capacity of 100 cars in and out per day. The construction will not be begun at once, nor will the entire house be built this season. It will cost about \$60,000.

Thomas M. Ryan has occasioned the elevator owners at Buffalo, N. Y., considerable uneasiness by his purchase of the Clinton Flour Mill, which is situated with the Niagara River on one side and Black Rock Harbor on the other. Mr. Ryan is a canal forwarder and boat owner, and it is supposed that he will use the mill in part as a grain elevator.

Wm. Rahr's Sons, maltsters, of Manitowoc, Wis., are adding another elevator of 300,000 bushels' storage capacity to their plant. It is already in process of construction. They are also increasing their malting capacity to 500,000 bushels. This gives them in their three elevators a total storage capacity of 450,000 bushels. A new Nordberg 125 horse power Corliss Engine is also being put in by them.

The grain elevator being built at Anacortes, Wash., will have a capacity for 2,500,000 bushels, and will cost \$140,000. Among those connected with the enterprise are Senator Austin; B. F. Shaubut of the Seattle Elevator Company, E. H. Morrison, general land agent of the Oregon Improvement Company, B. F. Bush, chief engineer of the Seattle and Northern, and several other prominent railroad men.

The two suits of Samuel Berkowitz against the estate of John T. Lester, the commission man of the Chicago Board of Trade, were recently dismissed by Judge McConnell, the parties having reached a settlement out of court. Ten years ago Edward Pardridge speculated heavily in grain, losing large sums in Lester's commission house. Berkowitz was familiar with the transactions between Lester and Pardridge and began suit in 1884 against Lester as informer, under the gambling law, for \$900,000. The case dragged along in the courts for years under various forms until it was lately settled by the payment of an unknown consideration to Berkowitz.



William T. Baker, president of the Chicago Board of Trade, has been chosen president of the World's Columbian Exposition, vice Lyman J. Gage, resigned.

H. Peter of Black Creek, Wis., has moved to Milwaukee, where he will permanently reside. Mr. Peter emptied his elevator at Black Creek and settled up his business.

John O. Foering has been re-elected to the office of chief grain inspector at Philadelphia by the commercial exchange. Mr. Foering has filled that position for the past fourteen years to the satisfaction of all parties concerned.

The glucose factories have suspended operations, not because sugar is admitted free of duty, but because corn is dear. Glucose is higher now than it was before sugar was placed on the free list. The explanation is that the majority of uses to which glucose is put cannot be filled by cane sugar; for example, the tanning down of cane syrup, the manufacture of gum, candy, etc.

The greatest excitement prevailed on the San Francisco Produce Exchange April 21. The price of wheat was rushed up to \$1.93½ per cental. Thousands of tons changed hands, and some of the bull operators made large profits. George McNear, the heaviest dealer, made, it is estimated, \$500,000; Starr & Co. cleaned up \$400,000. Scores of the small fry made from \$5,000 to \$50,000. The shorts are wealthy and can afford to lose.

ITEMS FROM ABROAD

Nicolaieff, Russia, is to have a large grain elevator.

Egypt, whose harvest is just over, had a good crop.

Ephrussi & Co., one of the largest grain firms of Paris, failed May 8.

More breadstuffs are on passage to Great Britain than is usual at this season of the year.

Crop prospects have not improved in Germany. Rainy and wintry weather has prevailed.

Wheat stocks in New Zealand have been depleted, but considerable oats is still being exported.

France has bought more wheat for delivery during the next two months than the total visible supply.

It is estimated that 21,240,000 hundredweight of rice will be available for export from the rice crop of Burmah this year.

The Corn Millers' Association at Leeds, England, on May 5, reduced the price of flour 1s. 6d. per package of 280 pounds.

Reports of damage to the wheat in Belgium have been confirmed. A few fields make a better showing than was anticipated.

The amount of wheat exported from Australia of the last crop is much less than in 1890, when the exports reached 700,000 quarters.

The Argentine wheat crop is estimated at about the same as last year with 9,500,000 bushels for export. The corn crop does not promise well.

In Holland more favorable weather for field work has been experienced and the farmers have done considerable re-sowing with different kinds of seed.

In consequence of the high import duty which the French Government had levied on corn, distilleries at Bordeaux have been compelled to stop operations.

The weather in England has been favorable for sowing operations, which have been actively pursued. The young wheat plant continues to present a healthy appearance.

The growing wheat in Austria is backward but has not received any damage that can not be remedied by better weather. The weather has lately been quite favorable for all vegetation.

The French Government has decided to store large supplies of wheat in the fortified towns in France, including Paris; this will require considerable quantities of grain and will be done gradually.

The wheat crop of France has been almost destroyed by cold winds and frosts. Some estimates place the crop at 25 to 30 per cent. below the average, which will result in a shortage of 75,000,000 bushels.

The treaty entered into between Spain and the United States stipulates that the present duty on flour be reduced one-half in exchange for the free admission into the United States of sugar, coffee and cocoa.

The exports of cleaned rice, cleaned broken rice, and meal from Burmah during last year amounted to 618,021 tons, against 421,988 tons in 1889. Of the new crop about one million tons will probably be exported.

Shipments of grain from Russia, according to official reports, from Aug. 1, 1890, to March 21, amounted to 6,894,216 quarters, against 6,823,653 quarters in the same period of 1889-90, and 9,126,098 quarters in 1888-89.

It is rumored in Berlin that the government would grant a differential tariff on wheat imported from Austro-Hungary if the deputies from the rural districts would not yield to a reduction of the import duties on cereals.

Switzerland's imports of wheat and flour were equivalent to 13,160,000 bushels of wheat in 1890, against 15,600,000 bushels in 1889. Most of the wheat is imported from Hungary, Southern Russia and the Danube River country.

The British wheat imports were underestimated by the English Government. It was discovered on May 8 that the actual importation of wheat during the eight months ending April 30 were over 4,000,000 bushels more than the official estimate.

The rice milling industry in England has suffered greatly by the competition of mills in Burmah, the rice being already cleaned upon arrival. It is expected that the cleaning trade of Germany, Holland and Belgium will decay for the same reason.

The Argentine Republic in 1889 exported 24,000 tons of wheat, 450,000 tons of maize, and 28,200 tons of linseed, against 326,000 tons wheat, 710,000 tons maize, and 35,700 tons linseed in 1890. Total value in 1889, \$16,429,228; in 1890, \$25,825,899.

The Department of State has been informed by its legation at Lisbon that a royal decree was issued April 15, fixing the duty on foreign wheat imported into Portugal at ten reis (about 1 cent) a kilogram (of about 2.20

pounds) and removing the restrictions imposed by the decree of Aug. 29, 1889, on the sale of wheat in the open market. The home supply of wheat was exhausted and the millers demanded a reduction of the duty. They import principally American red winter.

A bank with a capital of 75,000,000 roubles has been proposed at St. Petersburg, to control the export grain trade of Russia. The Russian railroad administration has acted as a bank for grain-growers, by making advances on grain in transit or in the elevators it controls.

The President of Venezuela decreed that corn, rye, beans and peas may be imported free of duty after April 20, on account of a deficiency of the home crop. Thirty days' notice will be given in advance of the date when the duties will again be placed on cereals imported into Venezuela.

The agricultural societies of Russia have decided that, in order to prevent fraud, grain shall be sold in sacks of 3, 2½ and 5 pounds, a weight of less than one-half a pound shall be specified in pounds (a pound is 36 pounds). Should the sacks not contain the correct weight merchants will be severely punished.

The Indian wheat crop, which is now being harvested, is expected to be an average one of good quality. Although an increased acreage was planted, heavy rains in some districts offset that increase. Considerable damage was also done by rust and locusts. Not as much Indian wheat will be exported this year as last.

The Liverpool Corn Trade Association has had a case before the Railway Commissioners since last October relative to discriminations made by the London & Northwestern Railway against shipments of wheat and flour from Liverpool to Birmingham in favor of Cardiff and Bristol, on the Western coast ports. The commissioners decided in favor of the association, but the case was continued.

According to the annual report of the statistical department of Great Britain the crops of the United Kingdom amounted in 1890 to 75,993,883 bushels wheat, 80,793,525 bushels barley, and 171,295,404 bushels oats, against 75,883,611 bushels wheat, 74,703,755 bushels barley, and 164,078,736 bushels oats, in 1889. The yield per acre in 1890 was: Wheat, 30.66; barley, 35.23, and oats, 41.54 imperial bushels.

The grain trade of Odessa, Russia, is on the increase. The Southwestern Railway Company has done much to develop the country by building new lines of railway and also by constructing elevators at Odessa and at interior points on its system. One of the two sections of the Odessa elevator was burned last year, but it has been rebuilt. The closing of navigation almost every year in the winter is a serious interruption to the grain trade.

The police agents of the German Government are instituting secret inquiries in regard to a corn ring, which, it is alleged, has been engineering a wheat corner by sending large quantities to Rotterdam in order to create a scarcity at Berlin and so maintain prices. Speculators who have sold futures are unable to deliver. The reports say that detectives were watching operations on the Exchange and that all members of the ring will be expelled from the Bourse where intense excitement prevailed.

The general condition of winter wheat in Russia is very unpromising, especially in the southern districts. Reports from districts are a little more promising, but in the most favored sections it is sprouting sparsely. The outlook is very discouraging to the peasant holders who are becoming hopeless and are selling their small stock piecemeal in order to live. Their crop last year, which promised to be splendid, was ruined by three days of extremely hot weather in midsummer. Stocks in the warehouses have been greatly reduced and little available for shipment from Odessa remains.

The world consumes on an average about 270,000,000 quarters per annum, and next season's requirements will probably exceed that figure. In 1889 the world's crop was 253,400,000 quarters, and in 1888 about 269,000,000 quarters; in 1887 about 282,000,000 quarters. If in fact the next crop in Europe proves to be no better than now seems likely, it would make the third year in succession of deficient crops, and the British farmer in the season of 1891-92 would realize from 40s. to 50s. per quarter for his wheat instead of 30@40s., which has been the range during the last ten years.—*London Daily News*.

The Customs Committee of the French Chamber of Deputies on May 6 decided that the duty on wheat should be reduced to 3 francs (a franc is equal to .193 cents) per quarter, this reduction to hold good for one year. The committee also decided that the duty on corn should not be reduced. The reduction was necessary in view of the partial failure of the wheat crop. The President of France has decreed that corn may be admitted temporarily free of duty in order to be converted into grits and flour intended for human consumption or into coarse meal for cattle fodder. Corn and broken rice can also be admitted temporarily free of duty to be made into starch; broken rice may also be admitted to be made into flour.

A new departure in the rice trade is being made by the Fowler Rice Company of New York. The firm has made arrangements to import rice direct from the place of growth in India, China and Japan, and the first importation of 25,000 bags is now afloat in the steamer Lamington. This rice will be used principally by brewers.

Miscellaneous Notices.

LOCATION WANTED.

A good grain location wanted. Will buy or lease elevator property. Give particulars and address

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An elevator at York, Neb., for sale. Address
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Three No. 8 Excelsior Oat Clippers in good repair. Address

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J. C. RUNGE & Co., Mulvane, Sumner Co., Kan.

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I will sell the following described machinery at 50 per cent. below first cost: One 10-horse power portable engine almost as good as new, made by Woodson & Tenney of Dayton, O.; one No. 4 Warehouse corn sheller and cleaner combined, in good order, made by the Union Iron Works of Decatur, Ill.; one 5-ton hay scale, as good as new, and one set of head and boot elevator pulleys, 22x6 inches, and journal to boot pulley and shaft and driving to head. Address

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A horse power elevator of 20,000 bushels' capacity, in the best hard wheat territory in Minnesota, on the Fargo & Southern Railroad. I will sell outright or rent for a term of years, or I will handle grain for parties for so much per bushel. I have the J. Leaser Patent Self-Operating Grain Cleaner to clean wheat direct from farmers' wagons, before the wheat is weighed, and clean as fast as farmers can unload from wagons. This machine is operated by the weight of the grain. For further information address

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I will sell my warehouse, elevator and mill in this city, being compelled to move to another climate owing to ill health. Main building 30x60 feet, corn room and boiler room 28x30 feet, basement 11 feet, first floor 10½ feet, second 7½ feet, besides space under roof. The machinery comprises a 40-horse power engine, new boiler, one set 56-inch millstones, one "Scientific" feed mill, one Geo. T. Smith Scalper, one Cranson Scourer, one Hutehison Corn Sheller, one new Howe Wagon Scale, two small scales, corn kiln and bins for coal and salt, etc. The warehouse is on the C., C., C. and St. L. railway. It is the only warehouse in the city and there is no mill on the railroad. Address

H. L. HYATT, 4 W. Winter street, Delaware, O.

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I have for sale the following machines in good order: One Clutch; one No. 2½ Barnard & Leas Separator; one No. O Band one No. G Nonpareil Feed Mills; one No. 2 Magie Feed Mill; one No. New 4½ Scientific Feed Mill; one No. 2 Morgan Scourer; one ¾-in. Crown Water Meter; two 5 ft. by 32 in. hexagon scalping reels, and one double 6 ft. 6 in. by 30 in. hexagon scalping reel, etc. Address

WM. SESSINGHAUS, 1444 St. Louis avenue, St. Louis, Mo.

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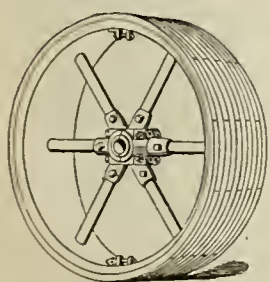
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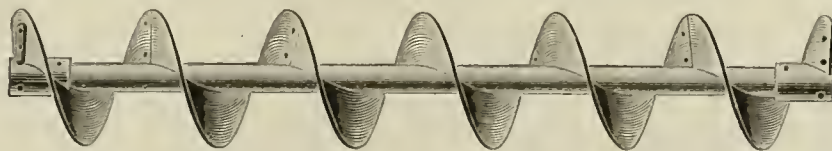


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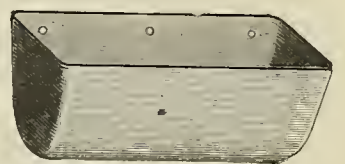


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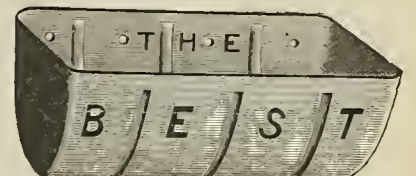
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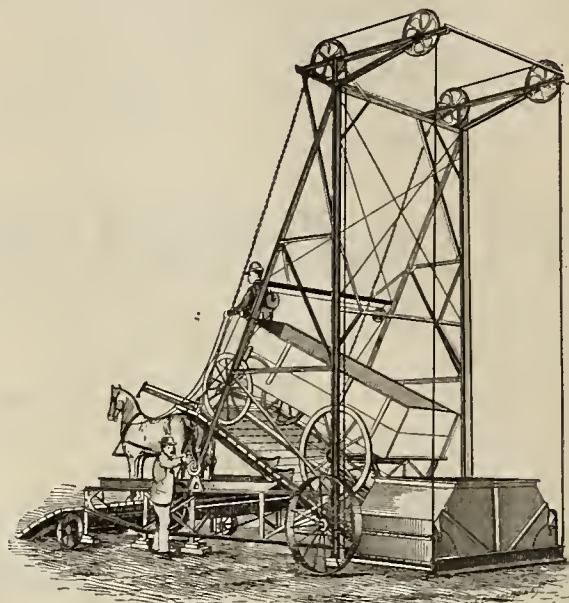
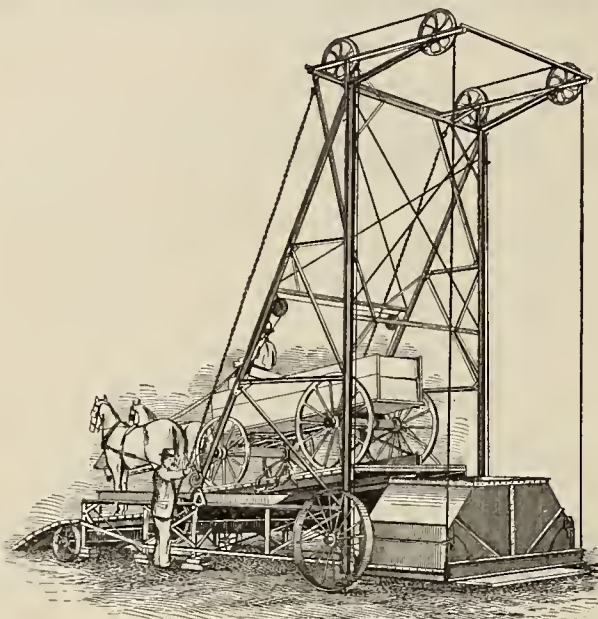
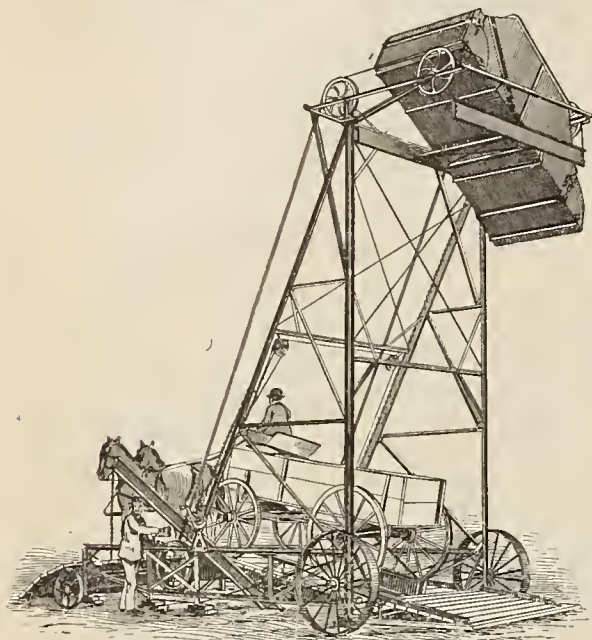


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For Dumping and Elevating from either **SLEDS** or **WAGONS**
EAR CORN or **POTATOES** as well as any kind of **SMALL GRAIN**.
Dumps and elevates a load in **TWO MINUTES**.
NO JERK ON HORSES OR JAM OF WAGON.

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J. S. KIDD, Des Moines, Iowa:

ODEBOLT, IOWA, November 14, 1890.

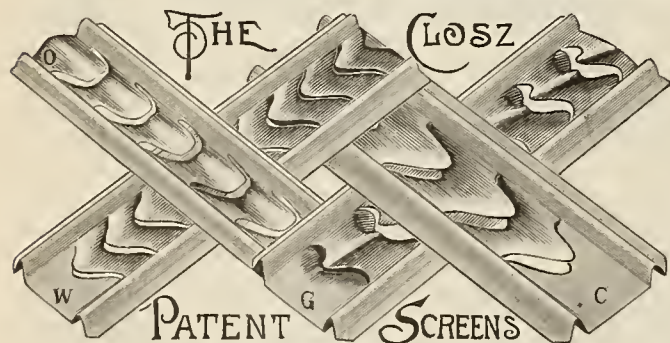
Your Portable Elevator works smoothly and well, and to our entire satisfaction. We have stored 40,000 bushels of oats with it. 30,000 bushels of which were handled in four weeks, and 2,500 bushels in one day. Much more could have been handled with ease. The heaviest load was 109 bushels. Our buildings are each 20x120 feet, 12 feet studding and the machine fills them to the collar beam by making but three openings in the roof. Our man handles it easily, although he is not a mechanic, and two horses have moved it without trouble. Farmers say they had rather dump on it than on the two rail dump. We were doubtful at first that it would work, but we are now more than satisfied with it. We could not well do without it as we would have to shovel the oats twice to fill the buildings once from the wagon and again inside the building. It not only does the work better and in less time, but saves quite an expense and wastes no grain. We assure you we cannot speak too highly of it, as it fully fills your claims for it.

See the descriptive article in another part of this paper.

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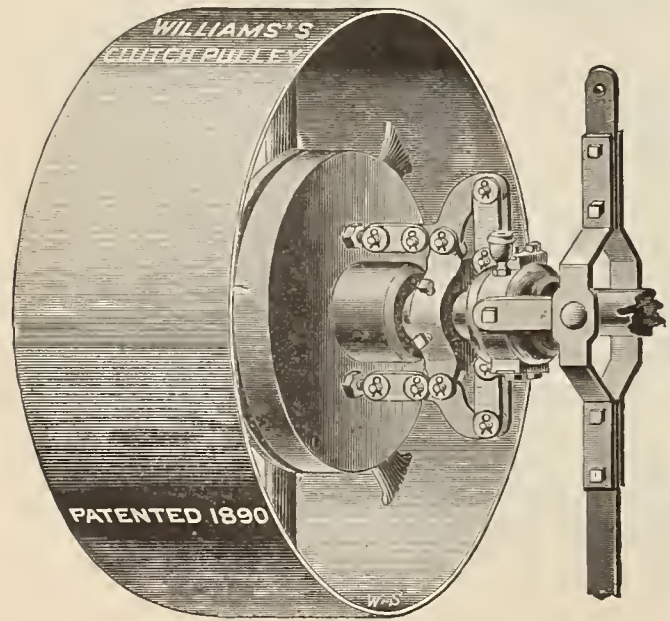
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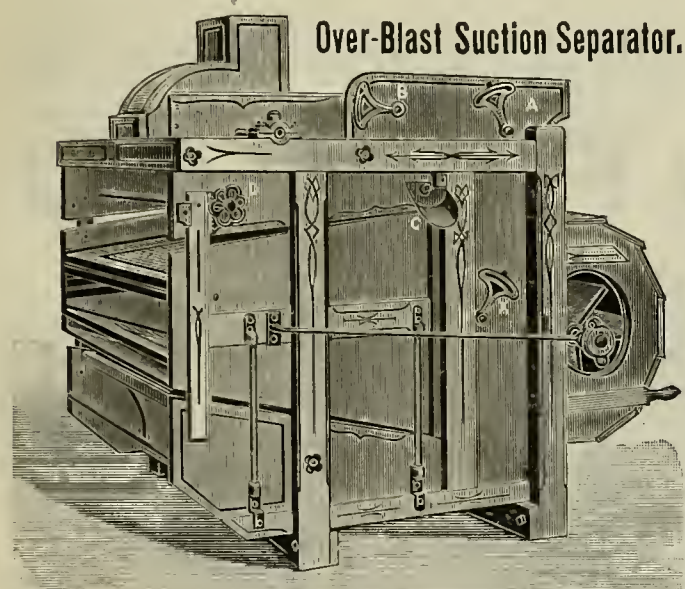
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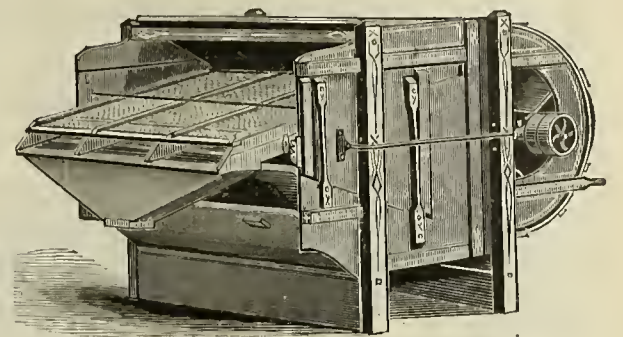
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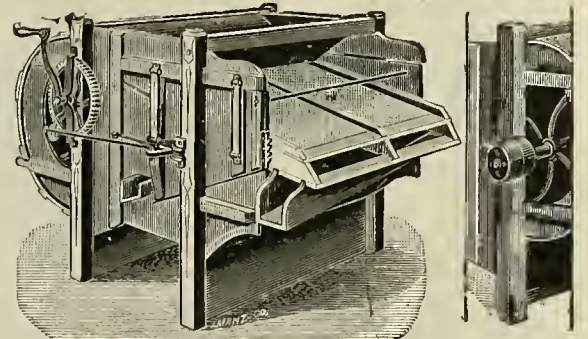
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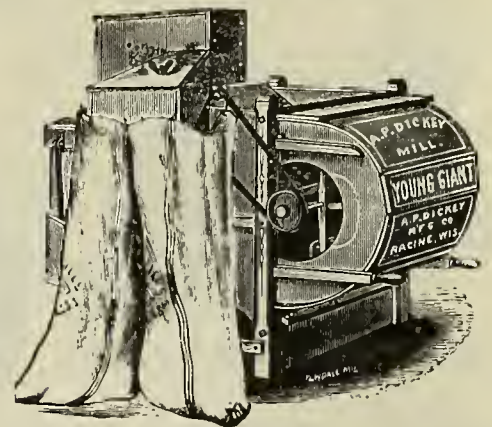
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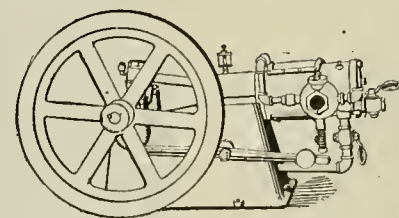
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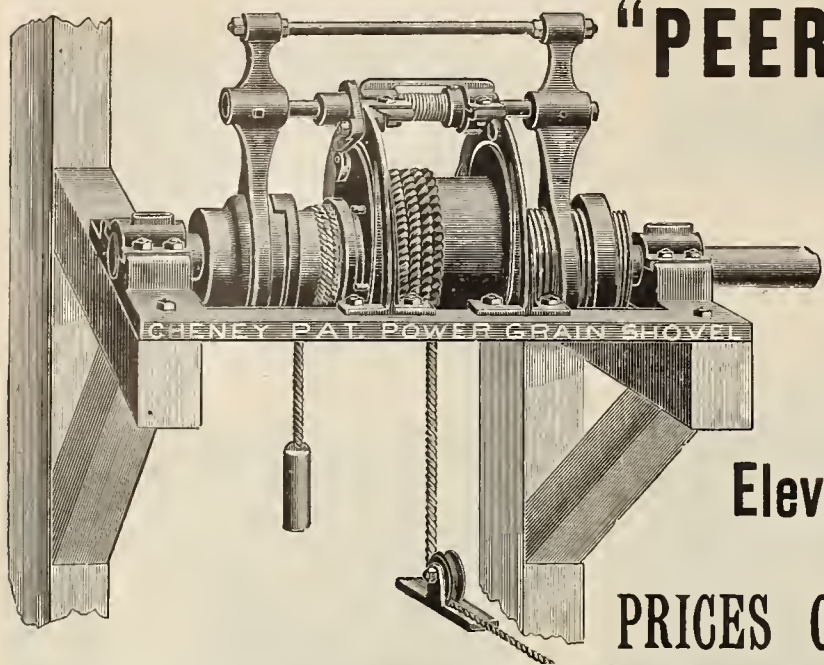
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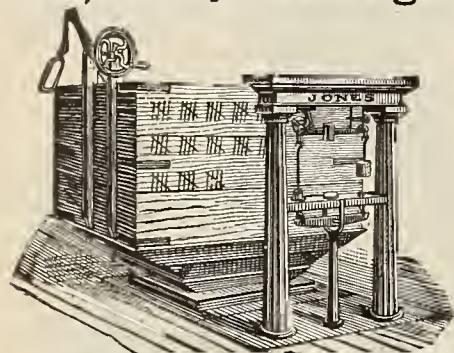
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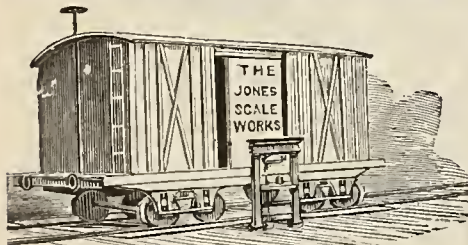
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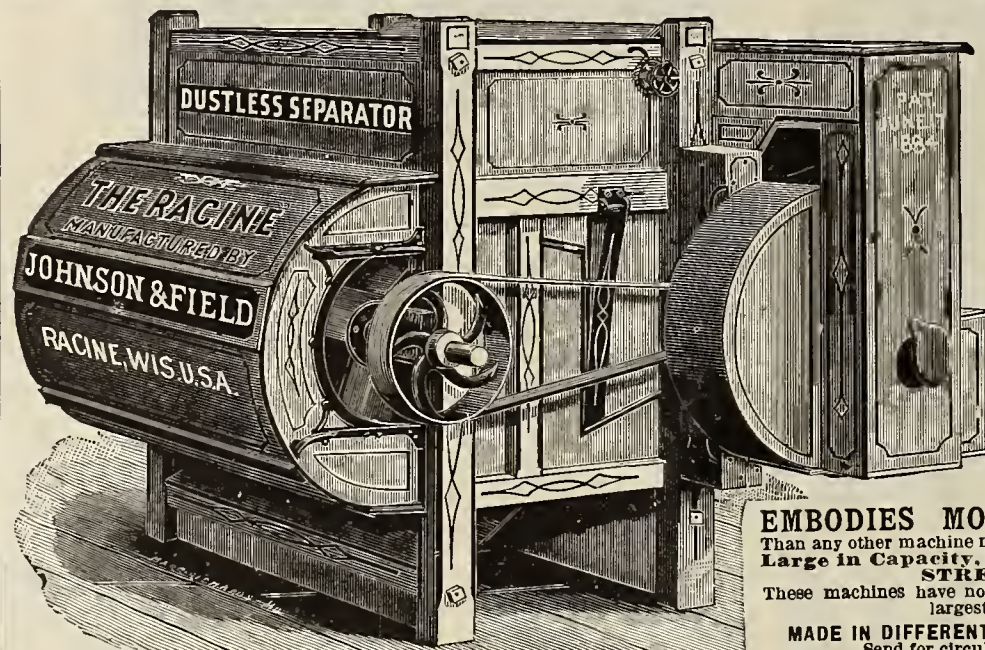
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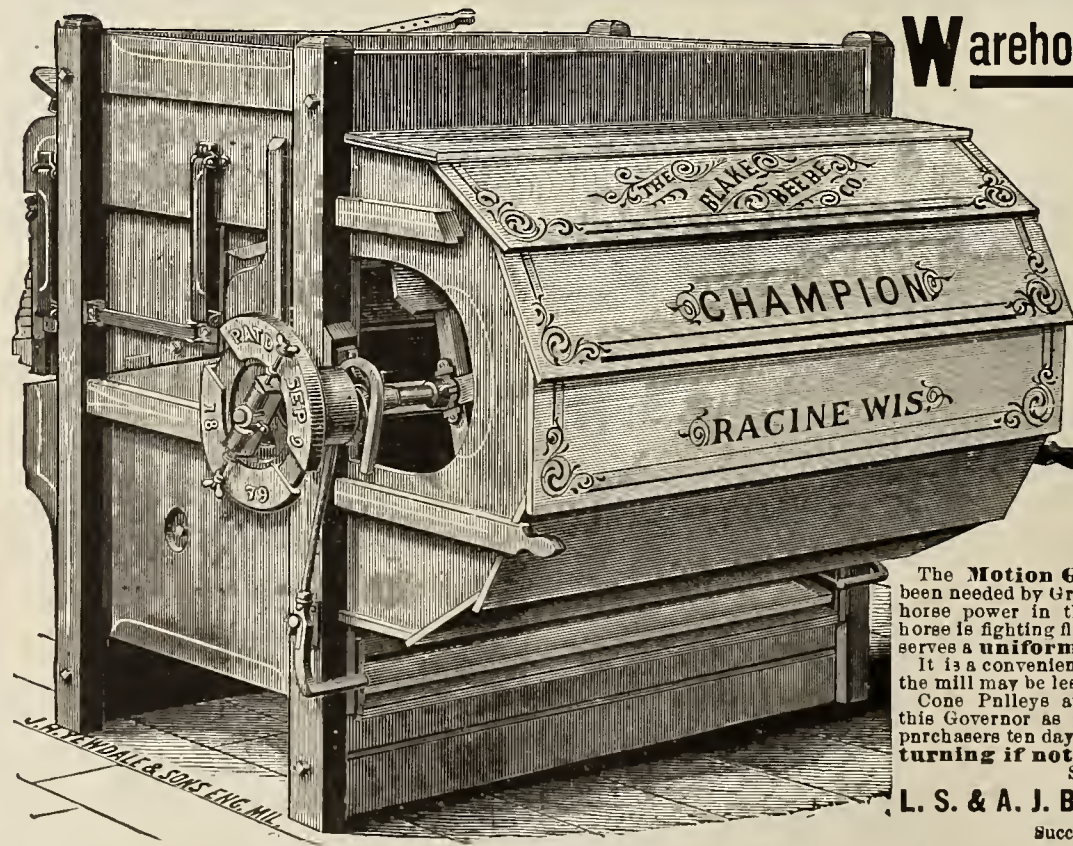


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The above wise estimate was made in Cotton Mather's time because an ingenious Yankee Puritan had invented an automatic machine—which by the way was not a success—for fulling cloth. It was an estimate also, made 125 years before the advent of

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THE BEST IN THE WORLD!!

IT HANDLES
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MALT AND BARLEY,

Better than any Automatic Scale
in use, and is the

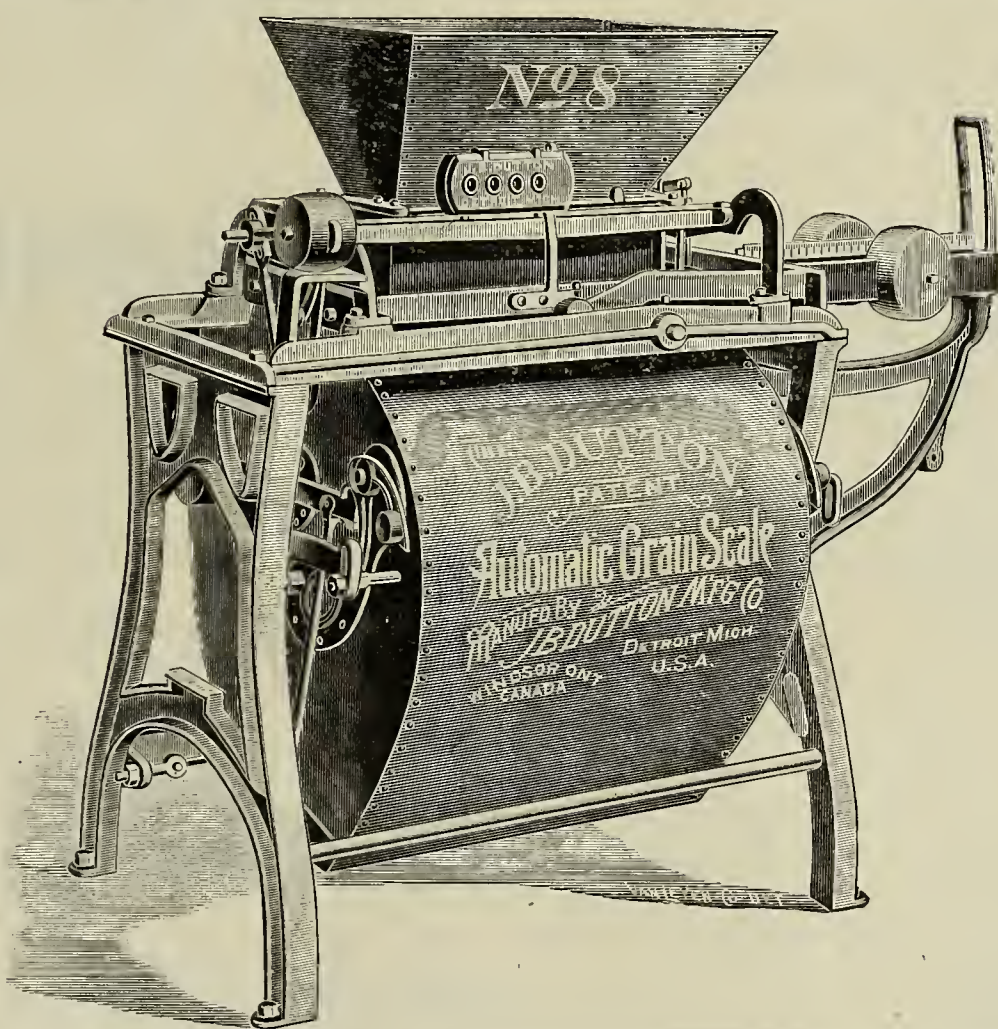
ONLY SCALE IN USE

Which Satisfactorily

WEIGHS AND REGISTERS,

As Grain is fed to

The First Break of Rolls.



BESIDES WEIGHING

THE GRAIN,

**THE J. B. DUTTON
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REGULATES

THE FLOW

OF GRAIN

ON THE ROLLS.

THE WORK DONE

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DEAR SIR:—In March, 1889, I purchased from you three of your Automatic Scales, one No. 4 and one No. 5 grain, and one feed scale. These have been in constant use since that time, and work as accurately now as they did the day we set them up. As yet they show no signs of wear. We are well pleased with the scales, and can recommend them as accurate and durable.

Yours truly,
WILLIAM BLODGETT.

GRAND RAPIDS, MICH., Feb. 23, 1891.
J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—The Automatic Grain Scale, that you sent us, more than meets our expectations as a scale. We are using it for the purpose of weighing beans from cars. We have weighed something like 40,000 bu. in the past three months, and have yet to find the time when it did not do its work correctly.

It being Automatic makes its own register, requires no attention whatever, and we cheerfully recommend it to the public as the scale for warehouses and elevators.

Very respectfully,
W. T. LAMOREAUX & CO.

DELAWARE, ILL., March 7, 1891.
MR. J. B. DUTTON, Detroit, Mich.

DEAR SIR:—We have been running one of your Automatic Grain Scales for the past 6 months and find they work and weigh grain correctly. We weigh the grain from the stock hopper to the rolls, thereby enabling us to know how much cleaned wheat it takes for a barrel of flour. We can recommend them to all millers.

Yours truly,
F. STARZ & SON.

SAGINAW, MICH., March 6, 1891.
J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to yours of the 4th will say that the Automatic Grain Scale we bought of you has been in almost constant use for over a year, and we find by frequent tests that they are very correct and reliable in ascertaining the amount of wheat ground each day.

Yours truly,
BRAND & HARDIN.

DULUTH, MINN., March 20, 1891.
J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to yours of the 18th, regarding your Automatic Scales, will say, that we have been using them in our mills and they have given perfect satisfaction.

We have made frequent thorough tests, and find that they are very accurate in weighing.

Respectfully yours,
GILL & WRIGHT.

ELDER MILLING CO.,
JACKSON, MICH., April 3, 1889.
J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to your favor of the 2d regarding your Automatic Scales which we are using on feed in our mills, am pleased to say that they are entirely satisfactory in every respect. We have tested them a great many times and find that they weigh very correctly. In matters of yields and percentages they are indispensable.

Wishing you every success with them, we are,
Yours truly,
ELDER MILLING CO.

WALLA WALLA, WASH., March 9, 1891.
J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—Replying to your favor of March 4, will say, the new Automatic Scale you sent us last fall has since been in constant use, and works to our entire satisfaction.

Yours truly,
H. P. ISAACS, Manager.

THE ISAAC HARTER CO.,
FOSTORIA, OHIO, June 19, 1889.
J. B. DUTTON, Esq., Detroit, Mich.

DEAR SIR:—The new register you sent us at the beginning of the year has been in constant use and works to our entire satisfaction.

As regards another testimonial, can only say that your Automatic Scale has been in operation in our mill for over a year, weighing all the feed we made during that time. Its correctness is no longer a question of doubt with us, having tested it both by grinding out all the wheat on hand, and by taking frequent drafts which, on Fairbanks or Howe Scales, show 100 pounds to each dump, the regular weight of each discharge from your No. 5 scale.

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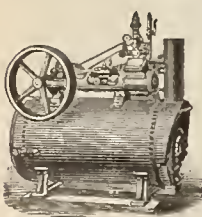
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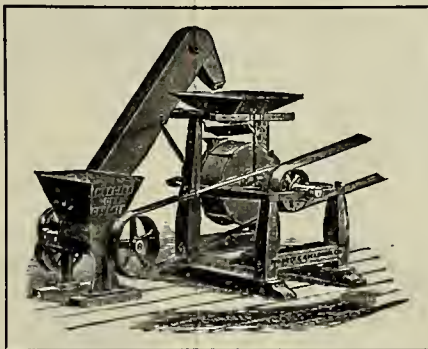
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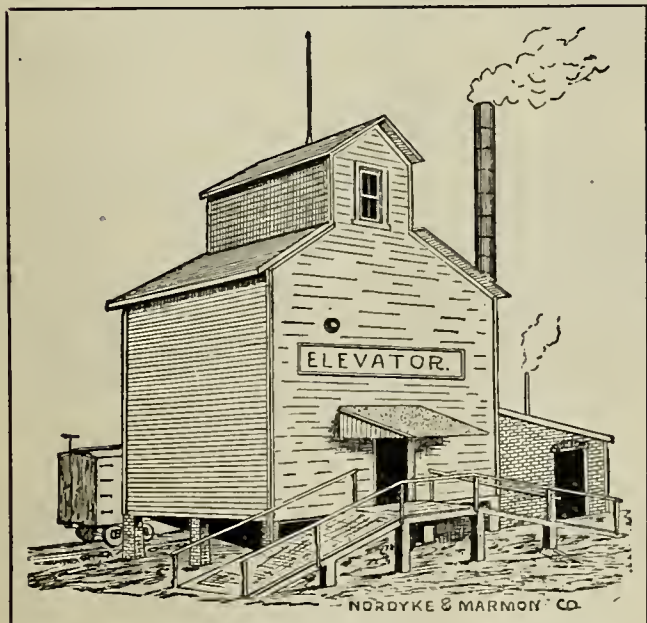


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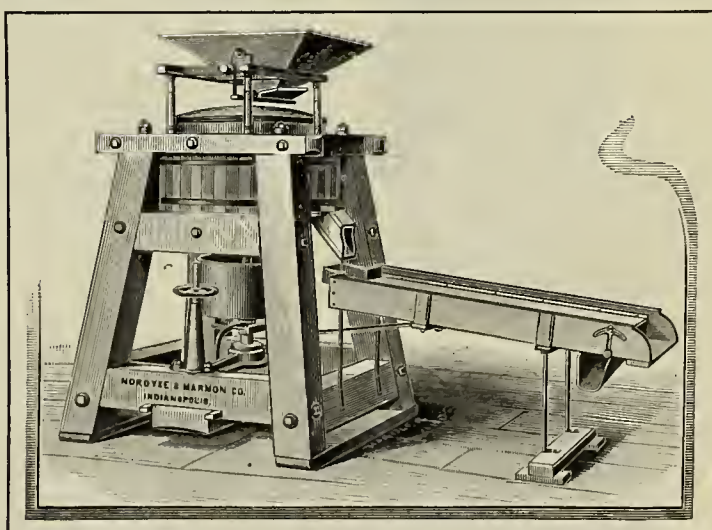


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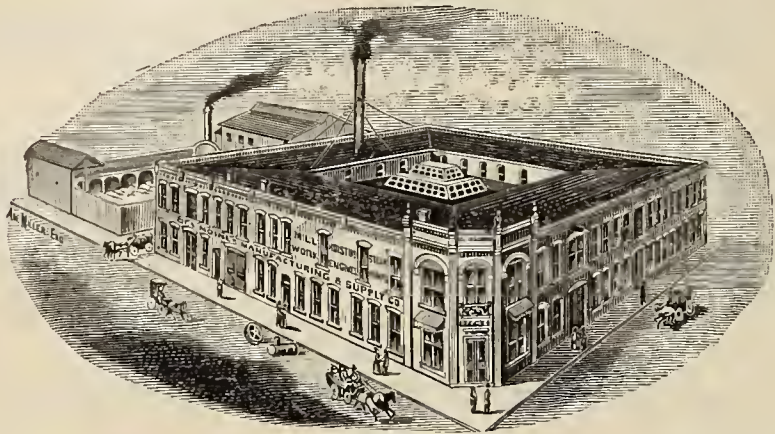
Warehousemen will do well to buy one to sell to farmers as I will give exclusive right to only one man at each station to sell. Warehousemen will please paste this up in warehouse where farmers can see it.

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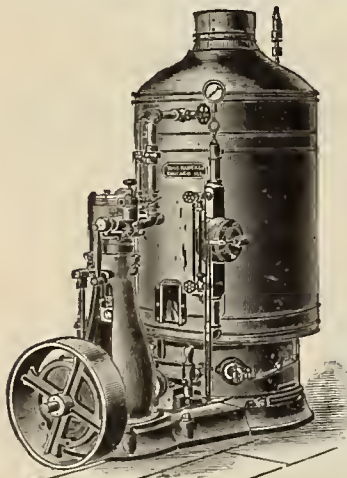
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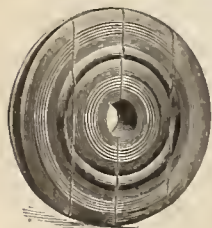
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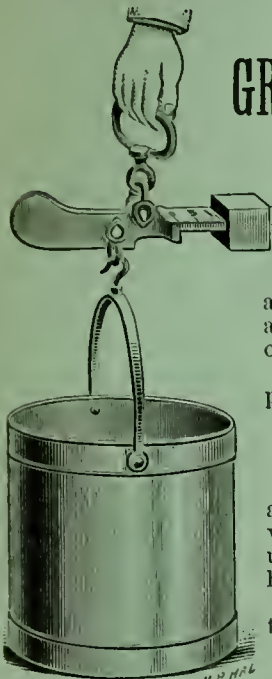
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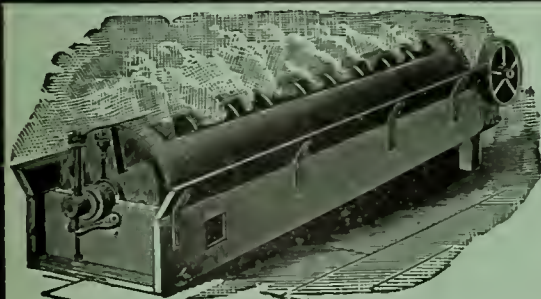
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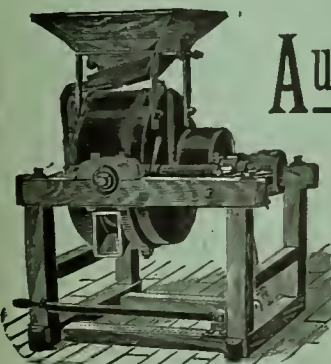
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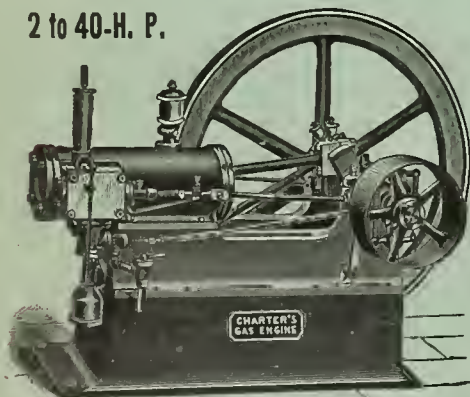
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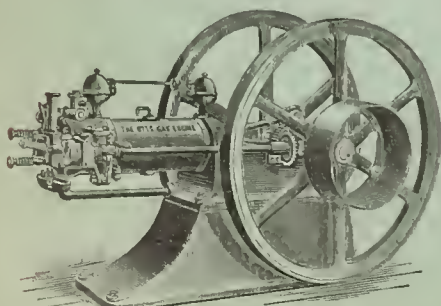
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